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☐	L14	choline transporter	39
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☐	L12	536/23.1,23.4,23.5.CCLS.	18653
☐	L11	536/23.1,23	0
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☐	L9	530/350.CCLS.	15413
☐	L8	L7 AND choline transporter	13
☐	L7	435/69.1,325.CCLS.	25568
☐	L6	Okuda.IN.	15626
☐	L5	Okuda-T.IN.	264
☐	L4	Okuda-Takashi.IN.	144
☐	L3	Haga.IN.	7026
☐	L2	Haga-T.IN.	192
☐	L1	(Haga-Tatsuya.IN.)	7

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☐ 1. Document ID: US 20040067499 A1

Using default format because multiple data bases are involved.

L1: Entry 1 of 7 File: PGPB Apr 8, 2004

PGPUB-DOCUMENT-NUMBER: 20040067499
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040067499 A1

TITLE: Novel g protein-coupled receptor

PUBLICATION-DATE: April 8, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Haga, Tatsuya	Zushi-shi, Kanagawa		JP	
Takeda, Shigeki	Yokohama-shi		JP	
Takeda, Shigeki	Kokubunj-shi, Tokyo		JP	

US-CL-CURRENT: 435/6; 435/7.1, 702/19

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 2. Document ID: JP 2004049004 A

L1: Entry 2 of 7 File: JPAB Feb 19, 2004

PUB-NO: JP02004049004A
DOCUMENT-IDENTIFIER: JP 2004049004 A
TITLE: 5-OXO-ETE RECEPTOR PROTEIN AND ITS GENE

PUBN-DATE: February 19, 2004

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
TAKEDA, SHIGEKI	
YAMAMOTO, ATSUSHI	

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 31/7088; A61 K 38/00; A61 K 45/00; A61 K 48/00; A61 P 29/00; A61 P 35/00 ; A61 P 37/02; A61 P 37/08; A61 P 43/00; C07 K 14/705; C07 K 16/28; C07 K 19/00; C12 N 1/15; C12 N 1/19; C12 N 1/21; C12 N 5/10; C12 Q 1/02; C12 Q 1/68; G01 N 33/15; G01 N 33/50; A61 K 31/202

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a 5-oxo-ETE receptor protein discovering an in vivo signal transduction mechanism or identifying a new drug target protein, its gene and a 5-oxo-ETE receptor agonist.

SOLUTION: A plurality of genes considered to encode a G-protein coupled receptor from a human genome sequence are searched and some thereof are cloned. Fusion genes of α-subunit genes of Gi1 bound to the 3'-terminal parts of the cloned genes are prepared and the resultant fusion genes are then transduced into insect cells to express receptor-Gi1α fusion proteins. When an agonist is bound to the receptor part of the fusion proteins, the binding of [35S]-GTPγS to the Gi1α part thereof can be expected from properties of the receptor and G protein. A search is made for whether or not a fusion protein having the bonds of the [35S]-GTPγS increased in a dose-dependent manner of the 5-oxo-ETE is present in the prepared fusion proteins.

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☐ 3. Document ID: JP 2003250551 A

L1: Entry 3 of 7 File: JPAB Sep 9, 2003

PUB-NO: JP02003250551A
DOCUMENT-IDENTIFIER: JP 2003250551 A
TITLE: METHOD FOR SEARCHING LIGAND USING FUSION PROTEIN OF G- PROTEIN-CONJUGATED RECEPTOR AND G16α

PUBN-DATE: September 9, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
SUGA, HINAKO	
TATSUMOTO, KAZUHIKO	

INT-CL (IPC): C12 N 15/09; C12 Q 1/02; G01 N 33/15; G01 N 33/50; G01 N 33/53; G01 N 33/566

ABSTRACT:

PROBLEM TO BE SOLVED: To provide a simple and highly sensitive method for searching ligands applicable in the case of Gi-conjugated receptors for which there is no easily usable cell response assaying method for searching a plenty of ligand candidate substances and in the case of orphan receptors for which prediction is difficult whether they are Gi-conjugated receptors or Gq-conjugated receptors.

SOLUTION: This method comprises the following practices. For determining the ligands for G-protein-conjugated receptors, a fusion gene of a G-protein- conjugated receptor gene and a G-protein G16's α-subunit (G16α) gene is created. The fusion gene is transduced into a cultured cell to express the fusion protein of the G-protein conjugated receptor and the G16α. Using the resultant cell, a cell response due to the ligand binding of the fusion protein to a receptor moiety (e.g. intracellular calcium concentration or prostaglandin production) is assayed. Thus, the plenty of ligand candidate substances are searched easily in high sensitivity regardless of the kind of receptor.

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☐ 4. Document ID: JP 2002112793 A

L1: Entry 4 of 7 File: JPAB Apr 16, 2002

PUB-NO: JP02002112793A
DOCUMENT-IDENTIFIER: JP 2002112793 A
TITLE: NEW G PROTEIN-COUPLED RECEPTOR

PUBN-DATE: April 16, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
TAKEDA, SHIGEKI	
BITAKU, SHIGEKI	

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 38/00; A61 K 39/395; A61 K 45/00; A61 K 48/00; A61 P 43/00; C07 K 14/705 ; C07 K 16/28; C07 K 19/00; C12 N 1/15; C12 N 1/19; C12 N 1/21; C12 N 5/10; C12 Q 1/02; C12 Q 1/68; G01 N 33/15; G01 N 33/50; G01 N 33/53; G01 N 33/566; C12 P 21/08

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a new G protein-coupled receptor(GPCR) gene capable of finding an in vivo signal transduction mechanism or identifying a new drug- target protein, and to provide a method for comprehensively searching for the GPCR gene on the database.

SOLUTION: Open reading frames(ORF) comprising 200-1,500 amino acid residues are extracted from human-derived genomic information and ORFs derived from DNA repetitive sequences, ORFs containing many indefinite amino acids and ORFs having ≥20% of the same amino acids are excluded to extract ORFs containing 6-8 transmembrane domains by using SOSUI. Among the resultant ORFs, a gene having the homology with a known GPCR gene, preferably a gene in which a gene having the highest homology in the homology searching is a GPCR gene or a GPCR-associated gene is searched for.

COPYRIGHT: (C)2002,JPO

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc

☐ 5. Document ID: JP 2002062255 A

L1: Entry 5 of 7 File: JPAB Feb 28, 2002

PUB-NO: JP02002062255A
DOCUMENT-IDENTIFIER: JP 2002062255 A
TITLE: DETECTOR FOR DETECTING SURFACE PLASMON RESONANCE ANGLE AND FLUORESCENCE CONCURRENTLY

PUBN-DATE: February 28, 2002

INVENTOR-INFORMATION:

NAME COUNTRY

TAKEDA, SHIGEKI

HAGA, TATSUYA

TANAKA, KOJI

YONEDA, HIDEKATSU

INT-CL (IPC): G01 N 21/27; G01 N 21/05; G01 N 21/64

ABSTRACT:

PROBLEM TO BE SOLVED: To highly precisely detect a characteristic of a specimen by combining an SPR method and a fluorescence detecting method.

SOLUTION: Light from a light source 9 is emitted onto a boundary of a metal thin film in a substrate 17 at a prescribed angle width, and the reflected light from the boundary is formed into the prescribed angle width to be received by the first photoreceiving member 15. A cell block is made to closely contact with the substrate, and a specimen solution labeled with a fluorescent substance is made to flow so as to be supplied to a portion corresponding to an area irradiated with the light. The second photoreceiving member 37 is provided in the cell block 21 corresponding to a substrate portion irradiated with the light to photoreceive the fluorescence from the fluorescent substance labeled to the specimen coupled to a sample probe. The specimen coupled to the sample probe is detected based on a surface plasmon resonance angle detected by the first photoreceiving member, and the fluorescence from the fluorescent substance excited by an evanescent wave generated when the light is brought into total reflection in a boundary of the metal thin film in the substrate.

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☐ 6. Document ID: JP 2001136976 A

L1: Entry 6 of 7 File: JPAB May 22, 2001

PUB-NO: JP02001136976A
DOCUMENT-IDENTIFIER: JP 2001136976 A
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2001

INVENTOR-INFORMATION:

NAME COUNTRY

HAGA, TATSUYA

OKUDA, TAKASHI

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 38/00; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 P 21/02; C12 P 21/08; C12 Q 1/00

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a protein exhibiting physiologically important high affinity choline transporter activity, a gene encoding the protein and a method for screening out a high affinity choline transporter activity-facilitating substance by using them.

SOLUTION: The nematode high affinity choline transporter cDNA (cho-1) is identified

by means of investigating high affinity choline incorporation activity by a Xenopus oocyte expression system on a Na+ dependent transporter cDNA predicted from the genomic sequence of nematode (C. elegans) and the rat high affinity choline transfer cDNA (CHT 1) from the rat spinal cord is cloned by using the homology between the base sequences of the cho-1 and the CHT 1 as an indication. Similarly, the human high affinity choline transporter cDNA from a human genome is cloned.

COPYRIGHT: (C)2001,JPO

☐ 7. Document ID: EP 1207200 A1

L1: Entry 7 of 7 File: EPAB May 22, 2002

PUB-NO: EP001207200A1
DOCUMENT-IDENTIFIER: EP 1207200 A1
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	JP
OKUDA, TAKASHI	JP

INT-CL (IPC): C12 N 15/12; C07 K 14/47; C12 Q 1/68; C07 K 19/00; C07 K 16/18; C12 N 5/10; A61 K 38/17; A61 K 45/00; A61 P 25/28; G01 N 33/53; A01 K 67/027
EUR-CL (EPC): C07K014/705; C07K014/435, G01N033/50 , G01N033/68 , G01N033/68

ABSTRACT:

Full | Title | Citation | Front | Review | Classification | Date | Reference | ... | Claims | KWIC | Draw. Desc

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☐ 1. Document ID: US 20040106125 A1

Using default format because multiple data bases are involved.

L8: Entry 1 of 13 File: PGPB Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106125
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040106125 A1

TITLE: Neurotransmission-associated proteins

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duggan, Brendan M	Sunnyvale	CA	US	
Honchell, Cynthia D	San Carlos	CA	US	
Ison, Craig H	San Jose	CA	US	
Thangavelu, Kavitha	Sunnyvale	CA	US	
Lu, Dyung Aina M	San Jose	CA	US	
Baughn, Mariah R	Los Angeles	CA	US	
Lal, Preeti G	Santa Clara	CA	US	
Yue, Henry	Sunnyvale	CA	US	
Tang, Y Tom	San Jose	CA	US	
Warren, Bridget A	San Marcos	CA	US	
Lee, Ernestine A	Castro Valley	CA	US	
Griffin, Jennifer A	Fremont	CA	US	
Forsythe, Ian J	Edmonton	CA	CA	
Chawla, Narinder K	Union City	CA	US	
Jiang, Xin	Saratoga	CA	US	
Jackson, Alan A	Los Gatos		US	

US-CL-CURRENT: 435/6; 424/143.1, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc

☐ 2. Document ID: US 20040048261 A1

L8: Entry 2 of 13 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

ABSTRACT:

Nucleic acid encoding a choline transporter from Drosophila melanogaster, herein referred to as dmCHT, is provided. The dmCHT nucleic acids, fragments and derivatives thereof may be used to genetically alter animals, such as insects, arachnids, worms, or in cultured cells to result in dmCHT expression or mis-expression. The thus genetically altered animal or cell may find use in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of interaction with the dmCHT. The genetically altered organism or cell may also find use in studying dmCHT activity and identifying other genes that modulate the function of, or interact with, the dmCHT gene.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc

☐ 3. Document ID: US 20040043449 A1

L8: Entry 3 of 13 File: PGPB Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040043449
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040043449 A1

TITLE: Glycerol-3-phosphate/dihydroxyacetone phosphate dual substrate acyltransferases

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zou, Jitao	Saskatoon		CA	
Zheng, Zhifu	Saskatoon		CA	

US-CL-CURRENT: 435/69.1; 435/193, 435/320.1, 435/325, 536/23.2

ABSTRACT:

The present invention relates to DNA sequences encoding novel Glycerol-3-Phosphate and Dihydroxy Acetone Phosphate acyltransferase enzymes, and methods for utilizing said polynucleotides for alteration of lipid content in higher cells, in particular plant cells, as well as other purposes.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc

☐ 4. Document ID: US 20030219806 A1

L8: Entry 4 of 13 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219806
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219806 A1

TITLE: Novel 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 molecules and uses therefor

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Glucksmann, Maria A.	Lexington	MA	US	
Curtis, Rory A.J.	Ashland	MA	US	
Lora, Jose M.	Arlington	MA	US	
Galvin, Katherine M.	Jamaica Plain	MA	US	
Silos-Santiago, Inmaculada	Del Mar	CA	US	

US-CL-CURRENT: 435/6; 435/183, 435/320.1, 435/325, 435/69.1, 514/12, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 gene has been introduced or disrupted. The invention still further provides isolated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 proteins, fusion proteins, antigenic peptides and anti-18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 5. Document ID: US 20030219777 A1

L8: Entry 5 of 13 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219777 A1

TITLE: Identification of candidate genes for the atherosclerosis susceptibility locus (ATHS)

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shang, Jin	Fremont	CA	US	
Bowen, Ben	Berkeley	CA	US	

US-CL-CURRENT: 435/6; 435/196, 435/320.1, 435/325, 435/69.1, 514/12, 536/23.2, 800/14

ABSTRACT:

Genes, nucleic acids, proteins, antibodies, marker sets, and arrays for the atherosclerosis susceptibility locus (ATHS) are provided. Methods of detecting atherosclerosis susceptibility and modulating cholesterol phenotype in cells are also provided.

☐ 6. Document ID: US 20030143729 A1

L8: Entry 6 of 13 File: PGPB Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030143729
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030143729 A1

TITLE: DNA encoding taurine and GABA transporters and uses thereof

PUBLICATION-DATE: July 31, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Smith, Kelli E.	Wayne	NJ	US	
Borden, Laurence A.	Hackensack	NJ	US	
Weinshank, Richard L.	Teaneck	NJ	US	
Hartig, Paul R.	Pennington	NJ	US	

US-CL-CURRENT: 435/320.1; 435/325, 435/69.1, 536/23.2

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

☐ 7. Document ID: US 20030114399 A1

L8: Entry 7 of 13 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 8. Document ID: US 20030022195 A1

L8: Entry 8 of 13 File: PGPB Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022195
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030022195 A1

TITLE: 59914 and 59921, choline transporters and uses therefor

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Curtis, Rory A.J.	Framingham	MA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc

☐ 9. Document ID: US 6500643 B1

L8: Entry 9 of 13 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWIC | Draw. Desc

☐ 10. Document ID: US 6225115 B1

L8: Entry 10 of 13 File: USPT May 1, 2001

US-PAT-NO: 6225115
DOCUMENT-IDENTIFIER: US 6225115 B1
**** See image for Certificate of Correction ****

TITLE: DNA encoding taurine and GABA transporters and uses thereof

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Weinshank; Richard L.	Teaneck	NJ		
Hartig; Paul R.	Pennington	NJ		

US-CL-CURRENT: 435/320.1; 435/252.3, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

17 Claims, 61 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 49

☐ 11. Document ID: US 6046030 A

L8: Entry 11 of 13 File: USPT Apr 4, 2000

US-PAT-NO: 6046030
DOCUMENT-IDENTIFIER: US 6046030 A

TITLE: Human LIG-1 homolog (HLIG-1)

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Shujian	Levittown	PA		
Sweet; Raymond W	Bala Cynwyd	PA		
Truneh; Alemseged	West Chester	PA		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

HLIG-1 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing HLIG-1 polypeptides and polynucleotides in the design of protocols for the treatment of neurological disorders such as Alzheimer's disease, multiple sclerosis and abnormal neural development; endocrine disorders such as diabetes; and heart disease, among others and diagnostic assays for such conditions.

16 Claims, 0 Drawing figures
Exemplary Claim Number: 1

☐ 12. Document ID: US 5756348 A

L8: Entry 12 of 13 File: USPT May 26, 1998

US-PAT-NO: 5756348
DOCUMENT-IDENTIFIER: US 5756348 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/325; 435/252.33, 435/255.1, 435/320.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammalian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transporter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for

determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with human glycine transporter.

16 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 20

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc

☐ 13. Document ID: US 5658786 A

L8: Entry 13 of 13 File: USPT Aug 19, 1997

US-PAT-NO: 5658786
DOCUMENT-IDENTIFIER: US 5658786 A
**** See image for Certificate of Correction ****

TITLE: DNA encoding rat taurine transporter and uses thereof

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Weinshank; Richard L.	New York	NY		
Borden; Laurence A.	Hackensack	NJ		
Hartig; Paul R.	Princeton	NJ		

US-CL-CURRENT: 435/365; 435/252.3, 435/255.1, 435/320.1, 435/325, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters and methods of isolating these nucleic acid molecules. Further provided are vectors comprising the nucleic acid molecules as well as mammalian cells comprising such vectors, and antibodies directed to the GABA and taurine transporters. Nucleic acid probes useful for detecting nucleic acid molecules encoding GABA and taurine transporters are also provided. Antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a GABA or taurine transporter are further provided. Pharmaceutical compounds related to GABA and taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding a normal or a mutant GABA or taurine transporter are also provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with GABA and taurine transporters.

13 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 37

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc

Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Terms	Documents
L7 AND choline transporter	13

Display Format: - Change Format

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Clear | Generate Collection | Print | Fwd Refs | Bkwd Refs | Generate OACS

Search Results - Record(s) 1 through 6 of 6 returned.

☐ 1. Document ID: US 20040106125 A1

Using default format because multiple data bases are involved.

L10: Entry 1 of 6 File: PGPB Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106125
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040106125 A1

TITLE: Neurotransmission-associated proteins

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duggan, Brendan M	Sunnyvale	CA	US	
Honchell, Cynthia D	San Carlos	CA	US	
Ison, Craig H	San Jose	CA	US	
Thangavelu, Kavitha	Sunnyvale	CA	US	
Lu, Dyung Aina M	San Jose	CA	US	
Baughn, Mariah R	Los Angeles	CA	US	
Lal, Preeti G	Santa Clara	CA	US	
Yue, Henry	Sunnyvale	CA	US	
Tang, Y Tom	San Jose	CA	US	
Warren, Bridget A	San Marcos	CA	US	
Lee, Ernestine A	Castro Valley	CA	US	
Griffin, Jennifer A	Fremont	CA	US	
Forsythe, Ian J	Edmonton	CA	CA	
Chawla, Narinder K	Union City	CA	US	
Jiang, Xin	Saratoga	CA	US	
Jackson, Alan A	Los Gatos		US	

US-CL-CURRENT: 435/6; 424/143.1, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Des

☐ 2. Document ID: US 20040048261 A1

L10: Entry 2 of 6 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

ABSTRACT:

Nucleic acid encoding a choline transporter from Drosophila melanogaster, herein referred to as dmCHT, is provided. The dmCHT nucleic acids, fragments and derivatives thereof may be used to genetically alter animals, such as insects, arachnids, worms, or in cultured cells to result in dmCHT expression or mis-expression. The thus genetically altered animal or cell may find use in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of interaction with the dmCHT. The genetically altered organism or cell may also find use in studying dmCHT activity and identifying other genes that modulate the function of, or interact with, the dmCHT gene.

☐ 3. Document ID: US 20030219806 A1

L10: Entry 3 of 6 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219806
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219806 A1

TITLE: Novel 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 molecules and uses therefor

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Glucksmann, Maria A.	Lexington	MA	US	
Curtis, Rory A.J.	Ashland	MA	US	
Lora, Jose M.	Arlington	MA	US	
Galvin, Katherine M.	Jamaica Plain	MA	US	
Silos-Santiago, Inmaculada	Del Mar	CA	US	

US-CL-CURRENT: 435/6; 435/183, 435/320.1, 435/325, 435/69.1, 514/12, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic

acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 gene has been introduced or disrupted. The invention still further provides isolated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 proteins, fusion proteins, antigenic peptides and anti-18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 4. Document ID: US 20030114399 A1

L10: Entry 4 of 6 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

☐ 5. Document ID: US 20030022195 A1

L10: Entry 5 of 6 File: PGPB Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022195
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030022195 A1

TITLE: 59914 and 59921, choline transporters and uses therefor

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Curtis, Rory A.J.	Framingham	MA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 6. Document ID: US 6500643 B1

L10: Entry 6 of 6 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

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Terms	Documents
L9 AND choline transporter	6

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Search Results - Record(s) 1 through 8 of 8 returned.

☐ 1. Document ID: US 20040048261 A1

Using default format because multiple data bases are involved.

L13: Entry 1 of 8 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc

☐ 2. Document ID: US 20030171563 A1

L13: Entry 2 of 8 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171563
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030171563 A1

TITLE: Regulators of bacterial virulence factor expression

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McNamara, Peter J.	Madison	WI	US	

US-CL-CURRENT: 536/23.1

ABSTRACT:

Genetic loci that encode polypeptides that regulate the expression of virulence factors in bacteria, particularly S. aureus. Methods of detecting the gene or gene products for purposes of detecting S. aureus or diagnosing a patient suspected of being infected by S. aureus.

☐ 3. Document ID: US 20030114399 A1

L13: Entry 3 of 8 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 4. Document ID: US 6500643 B1

L13: Entry 4 of 8 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

☐ 5. Document ID: US 6225115 B1

L13: Entry 5 of 8 File: USPT May 1, 2001

US-PAT-NO: 6225115
DOCUMENT-IDENTIFIER: US 6225115 B1
**** See image for Certificate of Correction ****

TITLE: DNA encoding taurine and GABA transporters and uses thereof

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Weinshank; Richard L.	Teaneck	NJ		
Hartig; Paul R.	Pennington	NJ		

US-CL-CURRENT: 435/320.1; 435/252.3, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

17 Claims, 61 Drawing figures
Exemplary Claim Number: 1

Number of Drawing Sheets: 49

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw. Desc

☐ 6. Document ID: US 6046030 A

L13: Entry 6 of 8 File: USPT Apr 4, 2000

US-PAT-NO: 6046030
DOCUMENT-IDENTIFIER: US 6046030 A

TITLE: Human LIG-1 homolog (HLIG-1)

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Shujian	Levittown	PA		
Sweet; Raymond W	Bala Cynwyd	PA		
Truneh; Alemseged	West Chester	PA		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

HLIG-1 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing HLIG-1 polypeptides and polynucleotides in the design of protocols for the treatment of neurological disorders such as Alzheimer's disease, multiple sclerosis and abnormal neural development; endocrine disorders such as diabetes; and heart disease, among others and diagnostic assays for such conditions.

16 Claims, 0 Drawing figures
Exemplary Claim Number: 1

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw. Desc

☐ 7. Document ID: US 5756348 A

L13: Entry 7 of 8 File: USPT May 26, 1998

US-PAT-NO: 5756348
DOCUMENT-IDENTIFIER: US 5756348 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		

Branchek; Theresa	Teaneck	NJ
Hartig; Paul R.	Princeton	NJ
Weinshank; Richard L.	New York	NY

US-CL-CURRENT: 435/325; 435/252.33, 435/255.1, 435/320.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammalian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transporter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with human glycine transporter.

16 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 20

☐ 8. Document ID: US 5658786 A

L13: Entry 8 of 8 File: USPT Aug 19, 1997

US-PAT-NO: 5658786
DOCUMENT-IDENTIFIER: US 5658786 A
**** See image for Certificate of Correction ****

TITLE: DNA encoding rat taurine transporter and uses thereof

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Weinshank; Richard L.	New York	NY		
Borden; Laurence A.	Hackensack	NJ		
Hartig; Paul R.	Princeton	NJ		

US-CL-CURRENT: 435/365; 435/252.3, 435/255.1, 435/320.1, 435/325, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters and methods of isolating these nucleic acid molecules. Further provided are vectors comprising the nucleic acid molecules as well as mammalian cells comprising such vectors, and antibodies directed to the GABA and taurine transporters. Nucleic acid probes useful for detecting nucleic acid molecules encoding GABA and taurine transporters are also provided. Antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a GABA or taurine transporter are further provided. Pharmaceutical compounds related to GABA and taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding a normal or a mutant GABA or taurine transporter are also provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with GABA and taurine transporters.

13 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 37

Terms	Documents
L12 AND choline transporter	8

Hit List

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Search Results - Record(s) 1 through 39 of 39 returned.

☐ 1. Document ID: US 20040106125 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 39 File: PGPB Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106125
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040106125 A1

TITLE: Neurotransmission-associated proteins

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duggan, Brendan M	Sunnyvale	CA	US	
Honchell, Cynthia D	San Carlos	CA	US	
Ison, Craig H	San Jose	CA	US	
Thangavelu, Kavitha	Sunnyvale	CA	US	
Lu, Dyung Aina M	San Jose	CA	US	
Baughn, Mariah R	Los Angeles	CA	US	
Lal, Preeti G	Santa Clara	CA	US	
Yue, Henry	Sunnyvale	CA	US	
Tang, Y Tom	San Jose	CA	US	
Warren, Bridget A	San Marcos	CA	US	
Lee, Ernestine A	Castro Valley	CA	US	
Griffin, Jennifer A	Fremont	CA	US	
Forsythe, Ian J	Edmonton	CA	CA	
Chawla, Narinder K	Union City	CA	US	
Jiang, Xin	Saratoga	CA	US	
Jackson, Alan A	Los Gatos		US	

US-CL-CURRENT: 435/6; 424/143.1, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 2. Document ID: US 20040101874 A1

L14: Entry 2 of 39 File: PGPB May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040101874
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040101874 A1

TITLE: Targets for therapeutic intervention identified in the mitochondrial proteome

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ghosh, Soumitra S.	San Diego	CA	US	
Fahy, Eoin D.	San Diego	CA	US	
Zhang, Bing	Spring	TX	US	
Gibson, Bradford W.	Berkeley	CA	US	
Taylor, Steven W.	San Diego	CA	US	
Glenn, Gary M.	Encinitas	CA	US	
Warnock, Dale E.	San Diego	CA	US	
Gaucher, Sara P.	Castro Valley	CA	US	

US-CL-CURRENT: 435/6; 435/317.1

ABSTRACT:

Mitochondrial targets for drug screening assays and for therapeutic intervention in the treatment of diseases associated with altered mitochondrial function are provided. Complete amino acid sequences [SEQ ID NOS:1-3025] of polypeptides that comprise the human heart mitochondrial proteome are provided, using fractionated proteins derived from highly purified mitochondrial preparations, to identify previously unrecognized mitochondrial molecular components.

☐ 3. Document ID: US 20040048261 A1

L14: Entry 3 of 39 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

ABSTRACT:

Nucleic acid encoding a choline transporter from Drosophila melanogaster, herein referred to as dmCHT, is provided. The dmCHT nucleic acids, fragments and derivatives thereof may be used to genetically alter animals, such as insects, arachnids, worms, or in cultured cells to result in dmCHT expression or mis-expression. The thus genetically altered animal or cell may find use in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of

interaction with the dmCHT. The genetically altered organism or cell may also find use in studying dmCHT activity and identifying other genes that modulate the function of, or interact with, the dmCHT gene.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des

☐ 4. Document ID: US 20040043449 A1

L14: Entry 4 of 39 File: PGPB Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040043449
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040043449 A1

TITLE: Glycerol-3-phosphate/dihydroxyacetone phosphate dual substrate acyltransferases

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zou, Jitao	Saskatoon		CA	
Zheng, Zhifu	Saskatoon		CA	

US-CL-CURRENT: 435/69.1; 435/193, 435/320.1, 435/325, 536/23.2

ABSTRACT:

The present invention relates to DNA sequences encoding novel Glycerol-3-Phosphate and Dihydroxy Acetone Phosphate acyltransferase enzymes, and methods for utilizing said polynucleotides for alteration of lipid content in higher cells, in particular plant cells, as well as other purposes.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des

☐ 5. Document ID: US 20040029795 A1

L14: Entry 5 of 39 File: PGPB Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029795
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040029795 A1

TITLE: Nucleic acid and corresponding protein entitled 24P4C12 useful in treatment and detection of cancer

PUBLICATION-DATE: February 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raitano, Arthur B.	Los Angeles	CA	US	
Morrison, Karen Jane Meyrick	Santa Monica	CA	US	

Ge, Wangmao	Culver City	CA	US
Challita-Eid, Pia M.	Encino	CA	US
Jakobovits, Aya	Beverly Hills	CA	US

US-CL-CURRENT: 514/12; 435/6, 435/7.23, 514/44

ABSTRACT:

A novel gene 024P4C12 (also designated 24P4C12) and its encoded protein, and variants thereof, are described wherein 24P4C12 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table 1. Consequently, 24P4C12 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 24P4C12 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 24P4C12 can be used in active or passive immunization.

☐ 6. Document ID: US 20030219806 A1

L14: Entry 6 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219806
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219806 A1

TITLE: Novel 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 molecules and uses therefor

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Glucksmann, Maria A.	Lexington	MA	US	
Curtis, Rory A.J.	Ashland	MA	US	
Lora, Jose M.	Arlington	MA	US	
Galvin, Katherine M.	Jamaica Plain	MA	US	
Silos-Santiago, Inmaculada	Del Mar	CA	US	

US-CL-CURRENT: 435/6; 435/183, 435/320.1, 435/325, 435/69.1, 514/12, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 gene has been introduced or disrupted. The invention still further provides isolated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or

33751 proteins, fusion proteins, antigenic peptides and anti-18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Des

☐ 7. Document ID: US 20030219777 A1

L14: Entry 7 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219777 A1

TITLE: Identification of candidate genes for the atherosclerosis susceptibility locus (ATHS)

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shang, Jin	Fremont	CA	US	
Bowen, Ben	Berkeley	CA	US	

US-CL-CURRENT: 435/6; 435/196, 435/320.1, 435/325, 435/69.1, 514/12, 536/23.2, 800/14

ABSTRACT:

Genes, nucleic acids, proteins, antibodies, marker sets, and arrays for the atherosclerosis susceptibility locus (ATHS) are provided. Methods of detecting atherosclerosis susceptibility and modulating cholesterol phenotype in cells are also provided.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Des

☐ 8. Document ID: US 20030171563 A1

L14: Entry 8 of 39 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171563
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030171563 A1

TITLE: Regulators of bacterial virulence factor expression

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McNamara, Peter J.	Madison	WI	US	

US-CL-CURRENT: 536/23.1

ABSTRACT:

Genetic loci that encode polypeptides that regulate the expression of virulence factors in bacteria, particularly S. aureus. Methods of detecting the gene or gene products for purposes of detecting S. aureus or diagnosing a patient suspected of being infected by S. aureus.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des

☐ 9. Document ID: US 20030143729 A1

L14: Entry 9 of 39 File: PGPB Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030143729
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030143729 A1

TITLE: DNA encoding taurine and GABA transporters and uses thereof

PUBLICATION-DATE: July 31, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Smith, Kelli E.	Wayne	NJ	US	
Borden, Laurence A.	Hackensack	NJ	US	
Weinshank, Richard L.	Teaneck	NJ	US	
Hartig, Paul R.	Pennington	NJ	US	

US-CL-CURRENT: 435/320.1; 435/325, 435/69.1, 536/23.2

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des

☐ 10. Document ID: US 20030134301 A1

L14: Entry 10 of 39 File: PGPB Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030134301
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030134301 A1

TITLE: Identification and use of molecules implicated in pain

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brooksbank, Robert Alan	Cambridge	MI	GB	
Dixon, Alistair Kerr	Cambridge		GB	
Lee, Kevin	Cambridge		GB	
Pinnock, Robert Denham	Ann Arbor		US	

US-CL-CURRENT: 435/6; 435/194, 435/7.1, 435/7.21, 800/3

ABSTRACT:

The invention relates to the use of:

(a) an isolated gene sequence that is down-regulated in the spinal cord in response to streptozocin-induced diabetes;

(b) an isolated gene sequence comprising a nucleic acid sequence of Tables I to X.

(c) an isolated gene sequence having at least 80% sequence identity with a nucleic acid sequence of Tables I to X;

(d) an isolated nucleic acid sequence that is hybridizable to any of the gene sequences according to (a), (b) or (c) under stringent hybridisation conditions;

(e) a recombinant vector comprising a gene sequence or nucleic acid sequence according to any one of (a) to (d);

(f) a host cell containing the vector according to (e);

(g) a non-human animal having in its genome an introduced gene sequence or nucleic acid sequence or a removed or down-regulated gene sequence or nucleic acid sequence according to any one of (a) to (d);

(h) an isolated polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence encoded by a nucleotide sequence according to any one of (a) to (d), or a polypeptide variant thereof with sequential amino acid deletions from the C terminus and/or the N-terminus; or

(i) an isolated polypeptide encoded by a nucleotide sequence according to any one of (a) to (d); or

(k) an isolated antibody that binds specifically to a polypeptide according to (h) or (i);

in the screening of compounds for the treatment of pain, or for the diagnosis of pain.

The invention also relates to the use of naturally occurring compounds such as

peptide ligands of the expression products of the above gene sequences and their associated signal transduction pathways for use in the treatment of pain.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Des

☐ 11. Document ID: US 20030114399 A1

L14: Entry 11 of 39 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Des

☐ 12. Document ID: US 20030082646 A1

L14: Entry 12 of 39 File: PGPB May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030082646
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030082646 A1

TITLE: Antigenic targets of autoimmune sensorineural hearing loss (AISNHL) and development of tests for diagnosis and management of AISNHL

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Carey, Thomas E.	Dexter	MI	US	

Nair, Thankam S.	Ann Arbor	MI	US
Beckman, Jennifer Gray	Falls Charch	VA	US

US-CL-CURRENT: 435/7.21; 530/389.2

ABSTRACT:

This invention relates generally to antigens reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and in particular relates to a novel antigen, Inner Ear Supporting Cell Antigen (IESCA) reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and to methods for the detecting therapeutic outcomes in treatment of AISNHL patients, and to methods of detecting genetic lesions in genes encoding for such antigens.

☐ 13. Document ID: US 20030022195 A1

L14: Entry 13 of 39 File: PGPB Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022195
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030022195 A1

TITLE: 59914 and 59921, choline transporters and uses therefor

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Curtis, Rory A.J.	Framingham	MA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 14. Document ID: US 20020061279 A1

L14: Entry 14 of 39 File: PGPB May 23, 2002

PGPUB-DOCUMENT-NUMBER: 20020061279

PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020061279 A1

TITLE: 18F-labeled choline analogs

PUBLICATION-DATE: May 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
DeGrado, Timothy R.	Durham	NC	US	
Coleman, R. Edward	Durham	NC	US	
Baldwin, Steven W.	Durham	NC	US	
Price, David T.	Greenwood	LA	US	
Orr, Matthew D.	Durham	NC	US	
Wang, Shuyan	Durham	NC	US	

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18F-labeled choline analogs and to compositions comprising such analogs.

☐ 15. Document ID: US 20020028510 A1

L14: Entry 15 of 39 File: PGPB Mar 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020028510
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020028510 A1

TITLE: Human cord blood as a source of neural tissue for repair of the brain and spinal cord

PUBLICATION-DATE: March 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sanberg, Paul	Spring Hill	FL	US	
Sanchez-Remos, Juan	Tampa	FL	US	
Willing, Alison	Tampa	FL	US	
Richard, Daniel D.	Sedona	AZ	US	

US-CL-CURRENT: 435/368

ABSTRACT:

The present invention relates to the use of umbilical cord blood cells from a donor

or patient to provide neural cells which may be used in transplantation. The isolated cells according to the present invention may be used to effect autologous and allogeneic transplantation and repair of neural tissue, in particular, tissue of the brain and spinal cord and to treat neurodegenerative diseases of the brain and spinal cord.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw. Des

☐ 16. Document ID: US 6630125 B2

L14: Entry 16 of 39 File: USPT Oct 7, 2003

US-PAT-NO: 6630125
DOCUMENT-IDENTIFIER: US 6630125 B2

TITLE: 18F-labeled choline analogs

DATE-ISSUED: October 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
DeGrado; Timothy R.	Durham	NC		
Coleman; R. Edward	Durham	NC		
Baldwin; Steven W.	Durham	NC		
Price; David T.	Greenwood	NC		
Orr; Matthew D.	Durham	NC		
Wang; Shuyan	Durham	NC		

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18 F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18 F-labeled choline analogs and to compositions comprising such analogs.

30 Claims, 23 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw. Des

☐ 17. Document ID: US 6500643 B1

L14: Entry 17 of 39 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

☐ 18. Document ID: US 6225115 B1

L14: Entry 18 of 39 File: USPT May 1, 2001

US-PAT-NO: 6225115
DOCUMENT-IDENTIFIER: US 6225115 B1
**** See image for Certificate of Correction ****

TITLE: DNA encoding taurine and GABA transporters and uses thereof

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Weinshank; Richard L.	Teaneck	NJ		
Hartig; Paul R.	Pennington	NJ		

US-CL-CURRENT: 435/320.1; 435/252.3, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to

the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

17 Claims, 61 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 49

☐ 19. Document ID: US 6127131 A

L14: Entry 19 of 39 File: USPT Oct 3, 2000

US-PAT-NO: 6127131
DOCUMENT-IDENTIFIER: US 6127131 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: October 3, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/7.1; 435/7.2, 435/7.21

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammamlian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic said molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter and nonhuman transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transorter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug

screening, and treatments for alleviating abnormalities associated with human glycine transporter.

8 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 22

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Draw. Desc

☐ 20. Document ID: US 6096788 A

L14: Entry 20 of 39 File: USPT Aug 1, 2000

US-PAT-NO: 6096788
DOCUMENT-IDENTIFIER: US 6096788 A

TITLE: Antimalaria and antibabesiosis agents and pharmaceutical compositions containing such agents

DATE-ISSUED: August 1, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vial; Henri	Montpellier			FR
Calas; Michele	Montpellier			FR
Ancelin; Marie-Laure	Saint Jean de Cuculles			FR
Giral; Louis	Montpellier			FR

US-CL-CURRENT: 514/231.8

ABSTRACT:

The invention concerns pharmaceutical compositions with antimalaria and antibabesiosis activity, the active substances of these compositions and their use for formulating antimalaria drugs.

25 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | | | Claims | KWMC | Draw. Desc

☐ 21. Document ID: US 6046030 A

L14: Entry 21 of 39 File: USPT Apr 4, 2000

US-PAT-NO: 6046030
DOCUMENT-IDENTIFIER: US 6046030 A

TITLE: Human LIG-1 homolog (HLIG-1)

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Shujian	Levittown	PA		
Sweet; Raymond W	Bala Cynwyd	PA		
Truneh; Alemseged	West Chester	PA		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

HLIG-1 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing HLIG-1 polypeptides and polynucleotides in the design of protocols for the treatment of neurological disorders such as Alzheimer's disease, multiple sclerosis and abnormal neural development; endocrine disorders such as diabetes; and heart disease, among others and diagnostic assays for such conditions.

16 Claims, 0 Drawing figures
Exemplary Claim Number: 1

☐ 22. Document ID: US 5929087 A

L14: Entry 22 of 39 File: USPT Jul 27, 1999

US-PAT-NO: 5929087
DOCUMENT-IDENTIFIER: US 5929087 A
**** See image for Certificate of Correction ****

TITLE: Decahydroquinoline-based anti-cholinergic agents

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Efange; S. Mbua Ngale	Plymouth	MN		
Parsons; Stanley M.	Santa Barbara	CA		

US-CL-CURRENT: 514/314; 514/278, 546/154, 546/158, 546/164, 546/17

ABSTRACT:

Compounds of formula I or formula II: ##STR1## wherein R, J, and Q have any of the values defined in the specification, and their pharmaceutically acceptable salts and related radiopharmaceuticals, have anticholinergic activity, and are useful for modulating cholinergic function in mammals. Also disclosed are pharmaceutical compositions, processes for preparing compounds of formula (I) or (II) and intermediates.

15 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

☐ 23. Document ID: US 5756348 A

L14: Entry 23 of 39 File: USPT May 26, 1998

US-PAT-NO: 5756348
DOCUMENT-IDENTIFIER: US 5756348 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/325; 435/252.33, 435/255.1, 435/320.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammalian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transporter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with human glycine transporter.

16 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 20

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc

☐ 24. Document ID: US 5658786 A

L14: Entry 24 of 39 File: USPT Aug 19, 1997

US-PAT-NO: 5658786
DOCUMENT-IDENTIFIER: US 5658786 A
**** See image for Certificate of Correction ****

TITLE: DNA encoding rat taurine transporter and uses thereof

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Weinshank; Richard L.	New York	NY		
Borden; Laurence A.	Hackensack	NJ		
Hartig; Paul R.	Princeton	NJ		

US-CL-CURRENT: 435/365; 435/252.3, 435/255.1, 435/320.1, 435/325, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters and methods of isolating these nucleic acid molecules. Further provided are vectors comprising the nucleic acid molecules as well as mammalian cells comprising such vectors, and antibodies directed to the GABA and taurine transporters. Nucleic acid probes useful for detecting nucleic acid molecules encoding GABA and taurine transporters are also provided. Antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a GABA or taurine transporter are further provided. Pharmaceutical compounds related to GABA and taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding a normal or a mutant GABA or taurine transporter are also provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with GABA and taurine transporters.

13 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 37

☐ 25. Document ID: JP 2001136976 A

L14: Entry 25 of 39 File: JPAB May 22, 2001

PUB-NO: JP02001136976A
DOCUMENT-IDENTIFIER: JP 2001136976 A
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
OKUDA, TAKASHI	

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 38/00; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 P 21/02; C12 P 21/08; C12 Q 1/00

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a protein exhibiting physiologically important high affinity choline transporter activity, a gene encoding the protein and a method for screening out a high affinity choline transporter activity-facilitating substance by using them.

SOLUTION: The nematode high affinity choline transporter cDNA (cho-1) is identified by means of investigating high affinity choline incorporation activity by a Xenopus oocyte expression system on a Na+ dependent transporter cDNA predicted from the genomic sequence of nematode (C. elegans) and the rat high affinity choline transfer cDNA (CHT 1) from the rat spinal cord is cloned by using the homology between the base sequences of the cho-1 and the CHT 1 as an indication. Similarly, the human high affinity choline transporter cDNA from a human genome is cloned.

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☐ 26. Document ID: WO 3040286 A2

L14: Entry 26 of 39 File: EPAB May 15, 2003

PUB-NO: WO003040286A2
DOCUMENT-IDENTIFIER: WO 3040286 A2
TITLE: CDW92 MOLECULE INDUCED IMMUNOMODULATION

PUBN-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
STOCKINGER, HANNES	AT
WILLE, STEFAN	AT
SZEKERES, ANDREAS	AT
MAJDIC, OTTO	AT
PRAGER, ELISABETH	AT
STAFFLER, GUENTHER	AT
STOECKL, JOHANNES	AT
KUNTHALERT, DUANGKAMOL	TH
PRIESCHL, EVA E	AT
BAUMRUKER, THOMAS	AT
BURTSCHER, HELMUT	AT
ZLABINGER, GERHARD J	AT
KNAPP, WALTER	AT

INT-CL (IPC): C12 N 0/

ABSTRACT:

CHG DATE=20030702 STATUS=O>CDw92 is a cell surface protein with a size of 70 kDa which is expressed on numerous leukocytes and endothelial cells. The invention relates to a method for the molecular cloning of the CDw92 molecule using a highly

efficient retroviral expression cloning system. Sequence analysis of the CDw92 cDNA established a length of 2679 base pairs. The open reading frame (ORF) having a size of 1959 bp contains the code for a protein with 652 AA. A computer-assisted analysis of the protein sequence of CDw92 established 10 transmembrane domains, three potential N glycosylation sites and one section in the C-terminal domain that is related to ITM (immunoreceptor tyrosine-based inhibitory motif). A comparison of the sequence of the CDw92 clone hereby found with various data base entries had the result that it is a C-terminal variant of the human choline transporter-like protein 1 that belongs to a family of surface proteins with several transmembrane domains recently identified. It was furthermore found that CDw92 is stably expressed on the surface of monocytes, PBLs and endothelial cells since so far no modulation of expression could be established for these cells using various stimulating substances. Contrary to this factor-independent expression of CDw92, a specific regulation of CDw92 was detected on the surface of monocyte-derived dendritic cells (Mo-DCs). During maturation of the Mo-DCs under the influence of ionomycine or calcium ionophore a down-regulation of CDw92 was observed and a specific new expression took place when these cells were incubated with IL-10. The addition of CDw92-mAks VIM15b to LPS-treated Mo-DCs led to an increase in LPS-induced IL-10 production by 2.8. In summary, these data furnish evidence for the critical role of the CDw92 protein for the field of biology and the regulation of the function of leukocytes, especially of dendritic cells.

☐ 27. Document ID: EP 1236739 A2

L14: Entry 27 of 39 File: EPAB Sep 4, 2002

PUB-NO: EP001236739A2
DOCUMENT-IDENTIFIER: EP 1236739 A2
TITLE: 59914 and 59921 Choline transporters and uses therefore

PUBN-DATE: September 4, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
CURTIS, RORY A J	US

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C07 K 16/18; G01 N 33/50; G01 N 33/53; C12 Q 1/68
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20021002 STATUS=O> The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 28. Document ID: EP 1207200 A1

L14: Entry 28 of 39 File: EPAB May 22, 2002

PUB-NO: EP001207200A1
DOCUMENT-IDENTIFIER: EP 1207200 A1
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	JP
OKUDA, TAKASHI	JP

INT-CL (IPC): C12 N 15/12; C07 K 14/47; C12 Q 1/68; C07 K 19/00; C07 K 16/18; C12 N 5/10; A61 K 38/17; A61 K 45/00; A61 P 25/28; G01 N 33/53; A01 K 67/027
EUR-CL (EPC): C07K014/705; C07K014/435, G01N033/50 , G01N033/68 , G01N033/68

ABSTRACT:

☐ 29. Document ID: WO 132704 A1

L14: Entry 29 of 39 File: EPAB May 10, 2001

PUB-NO: WO000132704A1
DOCUMENT-IDENTIFIER: WO 132704 A1
TITLE: CHOLINE TRANSPORTER LIKE (CTL) MEMBRANE PROTEINS INVOLVED IN CHOLINE TRANSPORT

PUBN-DATE: May 10, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
O'REGAN, SEANA	FR
MEUNIER, FRANCOIS	FR
TRAIFFORT, ELISABETH	FR
RUAT, MARTIAL	FR

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C12 N 5/06; C07 K 16/18; C12 N 15/11; C12 Q 1/68; A61 K 38/17; A61 P 25/00
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20010601 STATUS=O>The invention concerns the identification of a novel family of CTL (Choline Transporter Like) genes, in particular hCTL1 and hCTL2, involved in the metabolism and/or transport of choline in cells such as the intestinal tract cells, nervous cells, in particular motoneurons, sensitive neurons,

neurons of the nucleus dorsalis of the spinal cord and oligodendrocytes. The invention opens up new prospects in particular for the treatment of familial dysautonomia, and Tangier disease. More generally, the identification of CTL genes enables to develop new strategies for treating diseases of the nervous system, in particular neurodegenerative, demyelenating diseases, particularly Alzheimer disease, Parkinson disease and Huntington disease.

☐ 30. Document ID: US 20040048261 A1

L14: Entry 30 of 39 File: DWPI Mar 11, 2004

DERWENT-ACC-NO: 2004-226193
DERWENT-WEEK: 200421
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TITLE: Novel Drosophila melanogaster choline transporter (dmCHT) polypeptide, useful for characterizing pathways involving dmCHT, and for identifying potential pesticides

INVENTOR: RAMING, K

PRIORITY-DATA: 2002US-0241784 (September 11, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040048261 A1	March 11, 2004		031	C12Q001/68

INT-CL (IPC): A01 K 67/33; C07 H 21/04; C07 K 14/705; C12 Q 1/68

ABSTRACTED-PUB-NO: US20040048261A
BASIC-ABSTRACT:

NOVELTY - A Drosophila melanogaster choline transporter (dmCHT) polypeptide (I), comprising a 610 amino acid sequence (S1), given in the specification, an amino acid sequence (S2) having 100 % sequence similarity with at least 215 contiguous amino acids of (S1), or an amino acid sequence (S3) having 80 % sequence similarity with (S1), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated nucleic acid (II) or its complement, comprising a nucleotide sequence encoding (S2) or a nucleotide sequence encoding a functionally active choline transporter which comprises (S3), where (II) is less than 15 kb;

(2) a vector (III) comprising (II) or its complement;

(3) a host cell (IV) comprising (III);

(4) producing (I);

(5) an animal (V) genetically altered to express or mis-express dmCHT, or its progeny which has inherited that dmCHT expression or mis-expression mutation;

(6) studying (M1) dmCHT activity, comprising:

(a) detecting the phenotype caused by expression or mis-expression of dmCHT in (V),

where dmCHT comprises (S2) or (S3), or detecting the phenotype caused by expression or mis-expression of dmCHT in a first animal which is genetically altered as (V);

(b) detecting the phenotype of a second animal having the same genetic mutation as the first animal and a mutation in a gene of interest; and

(c) observing a difference between the phenotype of first animal and the phenotype of second animal, where a difference identifies the gene of interest capable of modifying the function of the gene encoding the dmCHT;

(7) a biopesticide (VI) comprising (II) or its complement, or (III);

(8) an antibody which specifically binds to (I) having (S2) or an amino acid sequence having 100% sequence similarity with (S1); and

(9) controlling the growth of a pest, involves applying biopesticide to the pest and/or its locus, where the biopesticide comprises isolated nucleic acid or its complement having nucleotide sequence (S4) encoding (I) comprising (S1), or a vector comprising nucleic acid or its complement having (S4), where the isolated nucleic acid is less than 15 kbase.

USE - (I) is useful for detecting a compound which interacts with dmCHT or its fragments, which involves exposing (I) comprising (S2) or (S3) to a compound, and detecting one interaction between the compound and (I), where the compound comprises a putative pesticide or pharmaceutical agent. The exposing, involves administering a compound to cultured host cells or animal genetically altered to express the dmCHT or its fragment. The administering comprises bathing, feeding, injecting or contacting. The compound is a putative pesticide and where detecting involves observing modulations of dmCHT activity resulting in animal lethality. (V) is useful for studying the activity of dmCHT. (VI) is useful for controlling the growth of a test, which involves applying (VI) to the pest and/or its locus. The animal is chosen from insects, arachnids and worms, such as Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Blattoidea, Dermaptera, Isoptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Spodoptera, Hymenoptera, Diptera, Siphonaptera, Arachnida, Acarinan or nematodes. The animal is chosen from Scistocerca sp., Blattella germanica, Bemisia tabaci, Myzus sp., Plodia interpunctella, Pectinophora gossypiella, Plutella sp., Heliothis sp., Leptinotarsa, Diabrotica sp., Anthonomus sp., Tribolium sp., Anopheles sp., Ctenocephalides felis, Amblyoma americanum, Meloidogyne sp. and Heterodera glycinii. (All claimed.) (I) is useful in genetic screening methods to characterize pathways which involve dmCHT, and other interacting genetic pathways. (I) and (II) are useful in identifying potential pesticides. (V) is useful in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of interaction with (I).

☐ 31. Document ID: US 20030114399 A1

L14: Entry 31 of 39 File: DWPI Jun 19, 2003

DERWENT-ACC-NO: 2003-810914
DERWENT-WEEK: 200376
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TITLE: Novel isolated polynucleotide encoding human or mouse high affinity choline transporter polypeptide, useful in gene therapy to increase cholinergic function in a cell of a patient suffering from Alzheimer's disease

INVENTOR: APPARSUNDARAM, S; BLAKELY, R D ; FERGUSON, S

PRIORITY-DATA: 2001US-0911077 (July 23, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20030114399 A1	June 19, 2003		074	A61K048/00

INT-CL (IPC): A61 K 48/00; C07 H 21/04; C07 K 14/47; C12 N 5/06; C12 P 21/02

ABSTRACTED-PUB-NO: US20030114399A
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) encoding a polypeptide having a fully defined human or mouse high affinity choline transporter (referred as hCHT and mCHT) polypeptide sequence (S1) of 580 amino acids, respectively as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a recombinant host cell (II) comprising a DNA segment encoding an isolated human or mouse choline transporter;

(2) a recombinant vector (III) comprising a DNA segment encoding a human or mouse choline transporter polypeptide under the control of a promoter;

(3) a purified and isolated polynucleotide (IV) which comprises a sequence identical or complementary to 14-100 contiguous nucleotides of a fully defined human or mouse choline transporter encoding polynucleotide sequence (S2);

(4) a purified peptide (V) comprising at least 10 contiguous amino acids of (S1);

(5) an antibody (VI) that immunologically binds to a protein or peptide encoded by human CHT polynucleotide sequence, or to a CHT protein or peptide that includes hCHT polypeptide sequence;

(6) a nucleic acid detection kit comprising in suitable container unit, an isolated human choline transporter nucleic acid segment and a detection reagent;

(7) a transgenic mouse (VII) lacking at least one functional mouse choline receptor allele;

(8) a transgenic mouse (VIII) whose genome comprises CHT-encoding DNA segment under the control of a heterologous promoter; and

(9) a transgenic mouse (IX) in which at least one mCHT allele is operably linked to a detectable label;

(10) a method for screening cholinergic therapeutics which involves obtaining a candidate substance, obtaining (II) comprising a polynucleotide encoding a human or mouse choline transporter (CHT) polypeptide and a promoter heterologus to the polypeptide coding region, where the promoter directs expression of the CHT polypeptide, combining candidate substance with the cell, and determining whether the candidate substance modulates high-affinity choline uptake.

ACTIVITY - Antiparkinsonian; Anticonvulsant; Nootropic; Neuroprotective; Neuroleptic; Muscular-Gen.

No supporting data is given.

MECHANISM OF ACTION - Gene therapy; Increases cholinergic function in cell; Modulator of high affinity choline uptake.

USE - (I) that encodes hCHT, is useful for expressing hCHT recombinantly which

involves preparing a recombinant vector in which a human choline transporter encoding the DNA segment is positioned under the control of a promoter, introducing the recombinant vector into a host cell, culturing the host cell under conditions effective to allow expression of the encoded protein or peptide, and collecting the expressed protein or peptide.

(I) that encodes hCHT when delivered to a cell, increases cholinergic function in a cell that is in a patient having Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis.

The candidate substance comprises treating a neuromuscular, autonomic or central nervous system disorder of the patient e.g., Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis (all claimed).

(VI) is useful for controlling transporter CHT proteins to the brain, and for treating the above mentioned diseases. The antibody is also useful for diagnosing the above mentioned disorders and to detect the influence of cholinergic signaling.

☐ 32. Document ID: WO 2003040286 A2

L14: Entry 32 of 39 File: DWPI May 15, 2003

DERWENT-ACC-NO: 2003-441535
DERWENT-WEEK: 200341
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TITLE: New human protein CDw92, useful for regulating function of leucocytes and the immune system, its modulators and organisms containing it

INVENTOR: BAUMRUKER, T; BURTSCHER, H ; KNAPP, W ; KUNTHALERT, D ; MAJDIC, O ; PRAGER, E ; PRIESCHL, E E ; STAFFLER, G ; STOCKINGER, H ; STOECKL, J ; SZEKERES, A ; WILLE, S ; ZLABINGER, G J

PRIORITY-DATA: 2001AT-0001744 (November 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003040286 A2	May 15, 2003	G	040	C12N000/00

INT-CL (IPC): C12 N 0/00

ABSTRACTED-PUB-NO: WO2003040286A
BASIC-ABSTRACT:

NOVELTY - The sequence of human protein CDw92, comprising an obligate function in the immune system, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an organism that expresses (I), or its mutant form that has an immune-regulating function;

(2) the immune-regulating, especially immune-system inhibiting, function of (I); and

(3) substances (A), e.g. natural or synthetic ligands, that are agonists or antagonists of the function of CDw92, such as antibodies raised against CDw92.

ACTIVITY - Immunomodulatory; Immunosuppressive.

No suitable data given.

MECHANISM OF ACTION - Modulating activity of protein CDw92 that may be:

(a) a component of the immunoreceptor tyrosine-based inhibitory motif-mediated signal transduction cascade; or

(b) a choline transporter, for synthesis of membrane phospholipids in immune system cells.

USE - (I), or its modulators, e.g. specific antibodies, are useful for regulating the function of leucocytes, particularly dendritic cells, possibly for therapeutic regulation of the immune system.

☐ 33. Document ID: EP 1415651 A1, WO 2003013522 A1

L14: Entry 33 of 39 File: DWPI May 6, 2004

DERWENT-ACC-NO: 2003-239565
DERWENT-WEEK: 200430
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TITLE: Agents for increasing choline transporter count on cell membrane surface for treating cholinergic neuropathy e.g. Alzheimer's disease, myasthenia gravis, glaucoma comprises tricyclic heterocycle compound

INVENTOR: BESSHO, T; TAKASHINA, K

PRIORITY-DATA: 2001JP-0238476 (August 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1415651 A1	May 6, 2004	E	000	A61K031/4355
WO 2003013522 A1	February 20, 2003	J	049	A61K031/4355

INT-CL (IPC): A61 K 31/4355; A61 P 21/04; A61 P 25/00; A61 P 25/14; A61 P 25/16; A61 P 25/20; A61 P 25/28; A61 P 27/06; A61 P 43/00; C07 D 491/048; C07 D 495/04

ABSTRACTED-PUB-NO: WO2003013522A
BASIC-ABSTRACT:

NOVELTY - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound (I).

DETAILED DESCRIPTION - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound of formula (I) or its acid addition salts, hydrates or solvates.

R1 = 2-6C alkyl or CH2N(R2)R3;

R2 = H or acetyl;

R3 = 1-6C alkyl, cycloalkyl or CHR4COOR5;

R4, R5, R6 = H or 1-6C alkyl; or

N(R2)R3 = 1-pyrrolidon-2-yl, imidazol-1-yl or 2,4-dioxo-(5-R6)-imidazolin-- yl;

ring A = (CH2)3, (CH2)4, CH=CH-CH=CH, SCH=CH, C(R7)=C(R8)S, C(R9)=C(R10)O, CH=CH-CH=N, CH=CH-N=CH or N=C(R11)O;

R7-R11 = H or 1-4C alkyl;

ring B = (CH2)3, CH(Q)CH2CH2CH(Q1), CH2C(R12)(R13)CH2CH2, CH=C(R14)CH2CH2 or CH2N(R15)CH2CH2;

Q, Q1 = H; or

Q+Q1 = CH2 or CH2CH2 as bridging group;

R12-R14 = H or 1-4C alkyl; or

R12+R13 = (CH2)n or O(CH2)mO;

n = 2-6;

m = 2 or 3;

R15 = H or aralkyl; and

provided that:

(a) when ring B is CH(Q)CH2CH2CH(Q1) or CH2N(R15)CH2CH2, then Q, Q1 is H or Q+Q1 is CH2, and

(b) when ring A is CH=CH-CH=CH, then R7 is not H (sic).

INDEPENDENT CLAIMS are also included for:

(1) agents for treating or preventing cholinergic neuropathy comprising (I); and

(2) a method of screening compounds for use in treating and preventing cholinergic neuropathy using the transporter count on the cell membrane surface as an indication.

ACTIVITY - Neuroprotective; Nootropic; Muscular-Gen.; Ophthalmological; CNS-Gen.

In an AF64A-induced cholinergic neuropathy model in Wistar rats 2-(2-oxopyrrolidin-1-yl)-N-(2,3-dimethyl-5,6,7,8-tetrahydrofuro(2,3-b)qui- nolin-4-yl)acetamide (Ia) at 3 mg/kg p.o. significantly (p is less than 0.01) increased choline uptake after 24 hours, 48 hours, 8 days and 16 days.

MECHANISM OF ACTION - Parasympathomimetic.

USE - For increasing the choline transporter count on the cell membrane surface useful for treating or preventing cholinergic neuropathy such as Alzheimer's disease, myasthenia gravis, glaucoma and circadian rhythm disorders.

ADVANTAGE - Can be administered twice a day or less without consideration of blood half life of compound, improving patient compliance and relieving load of caregiver.

☐ 34. Document ID: US 6500643 B1

DERWENT-ACC-NO: 2003-361535
DERWENT-WEEK: 200334
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TITLE: Novel isolated polynucleotide (I) that encodes high affinity choline transporter protein, useful for preventing, treating or ameliorating neurological and cognitive disorders such as Alzheimer's or Parkinson's disease

INVENTOR: GU, Y; HE, Y ; MILLARD, W J ; WU, D

PRIORITY-DATA: 2000US-0657252 (September 7, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6500643 B1	December 31, 2002		019	C07K001/00

INT-CL (IPC): C07 H 21/04; C07 K 1/00; C12 N 1/20; C12 P 21/06; G01 N 33/566

ABSTRACTED-PUB-NO: US 6500643B
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) which encodes a high affinity choline transporter (HACT) protein having a sequence (S1) comprising 580 amino acids fully defined in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (II) that encodes a polypeptide fragment consisting of at least about 50 amino acids of a HACT protein having S1;

(2) a composition (III) comprising (II) and a pharmaceutically acceptable carrier;

(3) a vector (IV) comprising (II);

(4) a composition (V) comprising (IV) and a vector comprising a polynucleotide which comprises at least about 12 contiguous nucleic acids of a polynucleotide having a sequence (S2) of 1893 base pairs fully defined in the specification;

(5) a recombinant host cell (VI) which comprises (IV);

(6) producing (M1) a recombinant cell that expresses a HACT polypeptide, or its fragment consisting of at least about 50 amino acids of S1, by transfecting a cell with a vector comprising (I) or (II); and

(7) producing (M2) a HACT polypeptide, or its fragment consisting of at least abut 50 amino acids of S1, by expressing the polypeptide in (VI).

ACTIVITY - Analgesic; Relaxant; Anticonvulsant; Cerebroprotective; Tranquilizer; Vulnerary; Neuroprotective; Nootropic; Anti-HIV; Antiparkinsonian; Antiaddictive; Neuroleptic.

MECHANISM OF ACTION - Gene therapy.

No supporting data is given.

USE - (I) is useful as a probe or primer to detect the presence of HACT polynucleotide in a sample, such as a biological sample, or for screening for test agents which bind to (I). A pharmaceutical composition comprising (I) is useful for preventing, treating or ameliorating neurological and cognitive disorders such as

pain, spasticity, myoclonus, muscle spasm, muscle hyperactivity, epilepsy, stroke, head trauma, neuronal cell death, multiple sclerosis, spinal cord injury, dystonia, Alzheimer's disease, myasthenia gravis, multi-infarct dementia, AIDS dementia, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis (ALS), attention deficit disorder, nicotine addiction, organic brain syndromes, schizophrenia or memory disorders.

☐ 35. Document ID: EP 1236739 A2, US 20030022195 A1

L14: Entry 35 of 39 File: DWPI Sep 4, 2002

DERWENT-ACC-NO: 2002-585600
DERWENT-WEEK: 200427
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TITLE: Nucleic acid molecules encoding choline transporters designated 59914 and 59921 useful for diagnostics and therapeutics

INVENTOR: CURTIS, R A J

PRIORITY-DATA: 2001US-267076P (February 1, 2001), 2002US-0062937 (January 31, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1236739 A2	September 4, 2002	E	082	C07K014/47
US 20030022195 A1	January 30, 2003		000	C12Q001/68

INT-CL (IPC): C07 H 21/04; C07 K 14/435; C07 K 14/47; C07 K 16/18; C12 N 5/06; C12 N 15/12; C12 N 15/63; C12 P 21/02; C12 Q 1/68; G01 N 33/50; G01 N 33/53

ABSTRACTED-PUB-NO: EP 1236739A
BASIC-ABSTRACT:

NOVELTY - An isolated nucleic acid molecule, is new.

DETAILED DESCRIPTION - An isolated nucleic acid (I) molecule selected from:

(a) a nucleic acid molecule comprising a nucleotide sequence which is at least 80% identical to a 2473, 2151, 2233 or 1959 (i-iv) nucleotide sequence fully defined in the specification;

(b) a nucleic acid molecule comprising a fragment of at least 600 nucleotides of (i) or (ii);

(c) a nucleic acid molecule comprising a fragment of at least 1660 nucleotides of (iii) or (iv);

(d) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence of 717 (v) or 653 (vi) amino acids fully defined in the specification;

(e) a nucleic acid molecule which encodes a fragment of (v) where the fragment is at least 100 contiguous amino acids;

(f) a nucleic acid molecule which encodes a fragment of (vi) where the fragment is at least 300 contiguous amino acids; and

(g) a nucleic acid molecule which encodes a naturally occurring allelic variant of a

polypeptide comprising the amino acid sequence of (v) or (vi) where the nucleic acid molecule hybridizes to a nucleic acid molecule comprising (i-iv).

INDEPENDENT CLAIMS are also included for the following:

(1) a host cell which contains (i-iv);

(2) an isolated polypeptide (II) encoded by (i-iv) or that is (v) or (vi);

(3) an antibody which selectively binds to (II);

(4) a method for producing (II);

(5) a method for detecting the presence of (I) or (II) in a sample by contacting the sample with a compound which selectively binds to (I) or (II);

(6) kits comprising compounds which selectively binds to (I) or (II); and

(7) modulating the activity of (II) comprising contacting a polypeptide or a cell expressing (II) with a compound which binds to (II) in a sufficient concentration to modulate its activity.

ACTIVITY - Hepatotropic; Cardiant; Metabolic; Nootropic; Neuroprotective; Immunomodulatory.

MECHANISM OF ACTION - Signal Transduction.

USE - Modulating the activity of the nucleic acids and proteins may be used in the treatment of conditions usually related to them such as CNS-related disorders, liver disorders, cardiovascular disorders, autoimmune disorders and metabolic disorders.

☐ 36. Document ID: US 20040043449 A1, WO 200208391 A2, AU 200176225 A

L14: Entry 36 of 39 File: DWPI Mar 4, 2004

DERWENT-ACC-NO: 2002-217056
DERWENT-WEEK: 200417
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TITLE: Novel glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide, useful for isolating related gene from various other species, including plant species

INVENTOR: ZHENG, Z; ZOU, J

PRIORITY-DATA: 2000US-220482P (July 25, 2000), 2003US-0332995 (August 29, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040043449 A1	March 4, 2004		000	C07H021/04
WO 200208391 A2	January 31, 2002	E	053	C12N009/00
AU 200176225 A	February 5, 2002		000	C12N009/00

INT-CL (IPC): C07 H 21/04; C12 N 5/06; C12 N 9/00; C12 N 9/10; C12 P 21/02

ABSTRACTED-PUB-NO: WO 200208391A
BASIC-ABSTRACT:

NOVELTY - A glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide (I) comprising a sequence (not given in the specification), or a sequence having at least 80 % identity to it, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (YBL011w or YKR067w) (II) comprising a 2232 or 2253 base pair sequence (S), fully defined in the specification, or a complementary strand of (S), a sequence that hybridizes under stringent conditions to the protein coding regions of (S) or the complementary strand or fragments of the sequence, or a sequence which, but for the degeneracy of the genetic code, would hybridize under stringent conditions to (S);

(2) an isolated polynucleotide (III) forming a protein coding region of (I), where the region encodes a protein having glycerol-3-phosphate acyltransferase (G-3-P) or dihydroxy acetone phosphate acyltransferase (DHAP) activity;

(3) a chimeric gene (IV) comprising (II) operably linked to a regulatory element;

(4) a plant (V), or its descendent, or a part of the plant or its descendent, having a genome modified to include (IV); and

(5) identifying G-3-P or DHAP genes, by producing a cell comprising a conditional choline auxotrophic lipid mutant, where growth of the mutant is inhibited by high levels of inositol, where the mutant is capable of suppression by supplementation of choline to an inositol-containing medium, producing, as a second mutant, a choline transporter mutant, combining the first and second mutants to form a double mutant, and screening the double mutant with cloned DNA, modified for expression in the cell, to identify a G-3-P/DHAP acyltransferase encoded genes capable or restoring normal growth to the mutants.

USE - (I) is useful for modifying the lipid composition of a cell, by introducing into a cell capable of being transformed with a genetic construct comprising a first DNA expression cassette that comprises, in addition to DNA sequences required for transformation and selection in the cells, (I), operably linked to a transcriptional regulatory region, and recovering a cell which contains the genetic construct (claimed). (I) or (II) is useful for isolating related gene from various other species, including plant species, and for isolating specific G-3-P/DHAP acyltransferase. (II) is useful for modifying lipid composition in higher organisms, for isolation of similar enzymatic activities from other organisms, for identifying related homologous sequences deposited in public databases, as a hybridization probe for the identification of the related cDNA or genomic sequences from various species, for isolating plant genes encoding the same enzymatic activities, to create transgenic plants in which (I) is present at higher or lower levels than normal or in cell types or developmental stages in which they are not normally found.

Hit List

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☐ 1. Document ID: US 20040106125 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 39 File: PGPB Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106125
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040106125 A1

TITLE: Neurotransmission-associated proteins

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duggan, Brendan M	Sunnyvale	CA	US	
Honchell, Cynthia D	San Carlos	CA	US	
Ison, Craig H	San Jose	CA	US	
Thangavelu, Kavitha	Sunnyvale	CA	US	
Lu, Dyung Aina M	San Jose	CA	US	
Baughn, Mariah R	Los Angeles	CA	US	
Lal, Preeti G	Santa Clara	CA	US	
Yue, Henry	Sunnyvale	CA	US	
Tang, Y Tom	San Jose	CA	US	
Warren, Bridget A	San Marcos	CA	US	
Lee, Ernestine A	Castro Valley	CA	US	
Griffin, Jennifer A	Fremont	CA	US	
Forsythe, Ian J	Edmonton	CA	CA	
Chawla, Narinder K	Union City	CA	US	
Jiang, Xin	Saratoga	CA	US	
Jackson, Alan A	Los Gatos		US	

US-CL-CURRENT: 435/6; 424/143.1, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc

☐ 2. Document ID: US 20040101874 A1

L14: Entry 2 of 39 File: PGPB May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040101874
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040101874 A1

TITLE: Targets for therapeutic intervention identified in the mitochondrial proteome

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ghosh, Soumitra S.	San Diego	CA	US	
Fahy, Eoin D.	San Diego	CA	US	
Zhang, Bing	Spring	TX	US	
Gibson, Bradford W.	Berkeley	CA	US	
Taylor, Steven W.	San Diego	CA	US	
Glenn, Gary M.	Encinitas	CA	US	
Warnock, Dale E.	San Diego	CA	US	
Gaucher, Sara P.	Castro Valley	CA	US	

US-CL-CURRENT: 435/6; 435/317.1

ABSTRACT:

Mitochondrial targets for drug screening assays and for therapeutic intervention in the treatment of diseases associated with altered mitochondrial function are provided. Complete amino acid sequences [SEQ ID NOS:1-3025] of polypeptides that comprise the human heart mitochondrial proteome are provided, using fractionated proteins derived from highly purified mitochondrial preparations, to identify previously unrecognized mitochondrial molecular components.

☑ 3. Document ID: US 20040048261 A1

L14: Entry 3 of 39 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

ABSTRACT:

Nucleic acid encoding a choline transporter from Drosophila melanogaster, herein referred to as dmCHT, is provided. The dmCHT nucleic acids, fragments and derivatives thereof may be used to genetically alter animals, such as insects, arachnids, worms, or in cultured cells to result in dmCHT expression or mis-expression. The thus genetically altered animal or cell may find use in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of

interaction with the dmCHT. The genetically altered organism or cell may also find use in studying dmCHT activity and identifying other genes that modulate the function of, or interact with, the dmCHT gene.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 4. Document ID: US 20040043449 A1

L14: Entry 4 of 39 File: PGPB Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040043449
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040043449 A1

TITLE: Glycerol-3-phosphate/dihydroxyacetone phosphate dual substrate acyltransferases

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zou, Jitao	Saskatoon		CA	
Zheng, Zhifu	Saskatoon		CA	

US-CL-CURRENT: 435/69.1; 435/193, 435/320.1, 435/325, 536/23.2

ABSTRACT:

The present invention relates to DNA sequences encoding novel Glycerol-3-Phosphate and Dihydroxy Acetone Phosphate acyltransferase enzymes, and methods for utilizing said polynucleotides for alteration of lipid content in higher cells, in particular plant cells, as well as other purposes.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 5. Document ID: US 20040029795 A1

L14: Entry 5 of 39 File: PGPB Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029795
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040029795 A1

TITLE: Nucleic acid and corresponding protein entitled 24P4C12 useful in treatment and detection of cancer

PUBLICATION-DATE: February 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raitano, Arthur B.	Los Angeles	CA	US	
Morrison, Karen Jane Meyrick	Santa Monica	CA	US	

Ge, Wangmao	Culver City	CA	US
Challita-Eid, Pia M.	Encino	CA	US
Jakobovits, Aya	Beverly Hills	CA	US

US-CL-CURRENT: 514/12; 435/6, 435/7.23, 514/44

ABSTRACT:

A novel gene 024P4C12 (also designated 24P4C12) and its encoded protein, and variants thereof, are described wherein 24P4C12 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table 1. Consequently, 24P4C12 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 24P4C12 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 24P4C12 can be used in active or passive immunization.

☐ 6. Document ID: US 20030219806 A1

L14: Entry 6 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219806
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219806 A1

TITLE: Novel 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 molecules and uses therefor

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Glucksmann, Maria A.	Lexington	MA	US	
Curtis, Rory A.J.	Ashland	MA	US	
Lora, Jose M.	Arlington	MA	US	
Galvin, Katherine M.	Jamaica Plain	MA	US	
Silos-Santiago, Inmaculada	Del Mar	CA	US	

US-CL-CURRENT: 435/6; 435/183, 435/320.1, 435/325, 435/69.1, 514/12, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 gene has been introduced or disrupted. The invention still further provides isolated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or

33751 proteins, fusion proteins, antigenic peptides and anti-18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc

☐ 7. Document ID: US 20030219777 A1

L14: Entry 7 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219777 A1

TITLE: Identification of candidate genes for the atherosclerosis susceptibility locus (ATHS)

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shang, Jin	Fremont	CA	US	
Bowen, Ben	Berkeley	CA	US	

US-CL-CURRENT: 435/6; 435/196, 435/320.1, 435/325, 435/69.1, 514/12, 536/23.2, 800/14

ABSTRACT:

Genes, nucleic acids, proteins, antibodies, marker sets, and arrays for the atherosclerosis susceptibility locus (ATHS) are provided. Methods of detecting atherosclerosis susceptibility and modulating cholesterol phenotype in cells are also provided.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Desc

☐ 8. Document ID: US 20030171563 A1

L14: Entry 8 of 39 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171563
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030171563 A1

TITLE: Regulators of bacterial virulence factor expression

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McNamara, Peter J.	Madison	WI	US	

US-CL-CURRENT: 536/23.1

ABSTRACT:

Genetic loci that encode polypeptides that regulate the expression of virulence factors in bacteria, particularly S. aureus. Methods of detecting the gene or gene products for purposes of detecting S. aureus or diagnosing a patient suspected of being infected by S. aureus.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 9. Document ID: US 20030143729 A1

L14: Entry 9 of 39 File: PGPB Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030143729
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030143729 A1

TITLE: DNA encoding taurine and GABA transporters and uses thereof

PUBLICATION-DATE: July 31, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Smith, Kelli E.	Wayne	NJ	US	
Borden, Laurence A.	Hackensack	NJ	US	
Weinshank, Richard L.	Teaneck	NJ	US	
Hartig, Paul R.	Pennington	NJ	US	

US-CL-CURRENT: 435/320.1; 435/325, 435/69.1, 536/23.2

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 10. Document ID: US 20030134301 A1

L14: Entry 10 of 39 File: PGPB Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030134301
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030134301 A1

TITLE: Identification and use of molecules implicated in pain

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brooksbank, Robert Alan	Cambridge	MI	GB	
Dixon, Alistair Kerr	Cambridge		GB	
Lee, Kevin	Cambridge		GB	
Pinnock, Robert Denham	Ann Arbor		US	

US-CL-CURRENT: 435/6; 435/194, 435/7.1, 435/7.21, 800/3

ABSTRACT:

The invention relates to the use of:

(a) an isolated gene sequence that is down-regulated in the spinal cord in response to streptozocin-induced diabetes;

(b) an isolated gene sequence comprising a nucleic acid sequence of Tables I to X.

(c) an isolated gene sequence having at least 80% sequence identity with a nucleic acid sequence of Tables I to X;

(d) an isolated nucleic acid sequence that is hybridizable to any of the gene sequences according to (a), (b) or (c) under stringent hybridisation conditions;

(e) a recombinant vector comprising a gene sequence or nucleic acid sequence according to any one of (a) to (d);

(f) a host cell containing the vector according to (e);

(g) a non-human animal having in its genome an introduced gene sequence or nucleic acid sequence or a removed or down-regulated gene sequence or nucleic acid sequence according to any one of (a) to (d);

(h) an isolated polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence encoded by a nucleotide sequence according to any one of (a) to (d), or a polypeptide variant thereof with sequential amino acid deletions from the C terminus and/or the N-terminus; or

(i) an isolated polypeptide encoded by a nucleotide sequence according to any one of (a) to (d); or

(k) an isolated antibody that binds specifically to a polypeptide according to (h) or (i);

in the screening of compounds for the treatment of pain, or for the diagnosis of pain.

The invention also relates to the use of naturally occurring compounds such as

peptide ligands of the expression products of the above gene sequences and their associated signal transduction pathways for use in the treatment of pain.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☑ 11. Document ID: US 20030114399 A1

L14: Entry 11 of 39 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 12. Document ID: US 20030082646 A1

L14: Entry 12 of 39 File: PGPB May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030082646
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030082646 A1

TITLE: Antigenic targets of autoimmune sensorineural hearing loss (AISNHL) and development of tests for diagnosis and management of AISNHL

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Carey, Thomas E.	Dexter	MI	US	

Nair, Thankam S.	Ann Arbor	MI	US
Beckman, Jennifer Gray	Falls Charch	VA	US

US-CL-CURRENT: 435/7.21; 530/389.2

ABSTRACT:

This invention relates generally to antigens reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and in particular relates to a novel antigen, Inner Ear Supporting Cell Antigen (IESCA) reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and to methods for the detecting therapeutic outcomes in treatment of AISNHL patients, and to methods of detecting genetic lesions in genes encoding for such antigens.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw. Des

☑ 13. Document ID: US 20030022195 A1

L14: Entry 13 of 39 File: PGPB Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022195
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030022195 A1

TITLE: 59914 and 59921, choline transporters and uses therefor

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Curtis, Rory A.J.	Framingham	MA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw. Des

☐ 14. Document ID: US 20020061279 A1

L14: Entry 14 of 39 File: PGPB May 23, 2002

PGPUB-DOCUMENT-NUMBER: 20020061279

PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020061279 A1

TITLE: 18F-labeled choline analogs

PUBLICATION-DATE: May 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
DeGrado, Timothy R.	Durham	NC	US	
Coleman, R. Edward	Durham	NC	US	
Baldwin, Steven W.	Durham	NC	US	
Price, David T.	Greenwood	LA	US	
Orr, Matthew D.	Durham	NC	US	
Wang, Shuyan	Durham	NC	US	

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18F-labeled choline analogs and to compositions comprising such analogs.

☐ 15. Document ID: US 20020028510 A1

L14: Entry 15 of 39 File: PGPB Mar 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020028510
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020028510 A1

TITLE: Human cord blood as a source of neural tissue for repair of the brain and spinal cord

PUBLICATION-DATE: March 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sanberg, Paul	Spring Hill	FL	US	
Sanchez-Remos, Juan	Tampa	FL	US	
Willing, Alison	Tampa	FL	US	
Richard, Daniel D.	Sedona	AZ	US	

US-CL-CURRENT: 435/368

ABSTRACT:

The present invention relates to the use of umbilical cord blood cells from a donor

or patient to provide neural cells which may be used in transplantation. The isolated cells according to the present invention may be used to effect autologous and allogeneic transplantation and repair of neural tissue, in particular, tissue of the brain and spinal cord and to treat neurodegenerative diseases of the brain and spinal cord.

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Des

☐ 16. Document ID: US 6630125 B2

L14: Entry 16 of 39 File: USPT Oct 7, 2003

US-PAT-NO: 6630125
DOCUMENT-IDENTIFIER: US 6630125 B2

TITLE: 18F-labeled choline analogs

DATE-ISSUED: October 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
DeGrado; Timothy R.	Durham	NC		
Coleman; R. Edward	Durham	NC		
Baldwin; Steven W.	Durham	NC		
Price; David T.	Greenwood	NC		
Orr; Matthew D.	Durham	NC		
Wang; Shuyan	Durham	NC		

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18 F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18 F-labeled choline analogs and to compositions comprising such analogs.

30 Claims, 23 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Claims | KWIC | Draw Des

☑ 17. Document ID: US 6500643 B1

L14: Entry 17 of 39 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

☐ 18. Document ID: US 6225115 B1

L14: Entry 18 of 39 File: USPT May 1, 2001

US-PAT-NO: 6225115
DOCUMENT-IDENTIFIER: US 6225115 B1
**** See image for Certificate of Correction ****

TITLE: DNA encoding taurine and GABA transporters and uses thereof

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Weinshank; Richard L.	Teaneck	NJ		
Hartig; Paul R.	Pennington	NJ		

US-CL-CURRENT: 435/320.1; 435/252.3, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to

the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

17 Claims, 61 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 49

☐ 19. Document ID: US 6127131 A

L14: Entry 19 of 39 File: USPT Oct 3, 2000

US-PAT-NO: 6127131
DOCUMENT-IDENTIFIER: US 6127131 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: October 3, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/7.1; 435/7.2, 435/7.21

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammamlian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic said molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter and nonhuman transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transorter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug

screening, and treatments for alleviating abnormalities associated with human glycine transporter.

8 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 22

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Claims | KWIC | Draw. Desc

☐ 20. Document ID: US 6096788 A

L14: Entry 20 of 39 File: USPT Aug 1, 2000

US-PAT-NO: 6096788
DOCUMENT-IDENTIFIER: US 6096788 A

TITLE: Antimalaria and antibabesiosis agents and pharmaceutical compositions containing such agents

DATE-ISSUED: August 1, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vial; Henri	Montpellier			FR
Calas; Michele	Montpellier			FR
Ancelin; Marie-Laure	Saint Jean de Cuculles			FR
Giral; Louis	Montpellier			FR

US-CL-CURRENT: 514/231.8

ABSTRACT:

The invention concerns pharmaceutical compositions with antimalaria and antibabesiosis activity, the active substances of these compositions and their use for formulating antimalaria drugs.

25 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Claims | KWIC | Draw. Desc

☐ 21. Document ID: US 6046030 A

L14: Entry 21 of 39 File: USPT Apr 4, 2000

US-PAT-NO: 6046030
DOCUMENT-IDENTIFIER: US 6046030 A

TITLE: Human LIG-1 homolog (HLIG-1)

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Shujian	Levittown	PA		
Sweet; Raymond W	Bala Cynwyd	PA		
Truneh; Alemseged	West Chester	PA		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

HLIG-1 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing HLIG-1 polypeptides and polynucleotides in the design of protocols for the treatment of neurological disorders such as Alzheimer's disease, multiple sclerosis and abnormal neural development; endocrine disorders such as diabetes; and heart disease, among others and diagnostic assays for such conditions.

16 Claims, 0 Drawing figures
Exemplary Claim Number: 1

☐ 22. Document ID: US 5929087 A

L14: Entry 22 of 39 File: USPT Jul 27, 1999

US-PAT-NO: 5929087
DOCUMENT-IDENTIFIER: US 5929087 A
**** See image for Certificate of Correction ****

TITLE: Decahydroquinoline-based anti-cholinergic agents

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Efange; S. Mbua Ngale	Plymouth	MN		
Parsons; Stanley M.	Santa Barbara	CA		

US-CL-CURRENT: 514/314; 514/278, 546/154, 546/158, 546/164, 546/17

ABSTRACT:

Compounds of formula I or formula II: ##STR1## wherein R, J, and Q have any of the values defined in the specification, and their pharmaceutically acceptable salts and related radiopharmaceuticals, have anticholinergic activity, and are useful for modulating cholinergic function in mammals. Also disclosed are pharmaceutical compositions, processes for preparing compounds of formula (I) or (II) and intermediates.

15 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

☐ 23. Document ID: US 5756348 A

L14: Entry 23 of 39 File: USPT May 26, 1998

US-PAT-NO: 5756348
DOCUMENT-IDENTIFIER: US 5756348 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/325; 435/252.33, 435/255.1, 435/320.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammalian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transporter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with human glycine transporter.

16 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 20

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Claims | KWMC | Draw Desc

☑ 24. Document ID: US 5658786 A

L14: Entry 24 of 39 File: USPT Aug 19, 1997

US-PAT-NO: 5658786
DOCUMENT-IDENTIFIER: US 5658786 A
**** See image for Certificate of Correction ****

TITLE: DNA encoding rat taurine transporter and uses thereof

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Weinshank; Richard L.	New York	NY		
Borden; Laurence A.	Hackensack	NJ		
Hartig; Paul R.	Princeton	NJ		

US-CL-CURRENT: 435/365; 435/252.3, 435/255.1, 435/320.1, 435/325, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters and methods of isolating these nucleic acid molecules. Further provided are vectors comprising the nucleic acid molecules as well as mammalian cells comprising such vectors, and antibodies directed to the GABA and taurine transporters. Nucleic acid probes useful for detecting nucleic acid molecules encoding GABA and taurine transporters are also provided. Antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a GABA or taurine transporter are further provided. Pharmaceutical compounds related to GABA and taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding a normal or a mutant GABA or taurine transporter are also provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with GABA and taurine transporters.

13 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 37

☑ 25. Document ID: JP 2001136976 A

L14: Entry 25 of 39 File: JPAB May 22, 2001

PUB-NO: JP02001136976A
DOCUMENT-IDENTIFIER: JP 2001136976 A
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
OKUDA, TAKASHI	

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 38/00; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 P 21/02; C12 P 21/08; C12 Q 1/00

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a protein exhibiting physiologically important high affinity choline transporter activity, a gene encoding the protein and a method for screening out a high affinity choline transporter activity-facilitating substance by using them.

SOLUTION: The nematode high affinity choline transporter cDNA (cho-1) is identified by means of investigating high affinity choline incorporation activity by a Xenopus oocyte expression system on a Na+ dependent transporter cDNA predicted from the genomic sequence of nematode (C. elegans) and the rat high affinity choline transfer cDNA (CHT 1) from the rat spinal cord is cloned by using the homology between the base sequences of the cho-1 and the CHT 1 as an indication. Similarly, the human high affinity choline transporter cDNA from a human genome is cloned.

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☐ 26. Document ID: WO 3040286 A2

L14: Entry 26 of 39 File: EPAB May 15, 2003

PUB-NO: WO003040286A2
DOCUMENT-IDENTIFIER: WO 3040286 A2
TITLE: CDW92 MOLECULE INDUCED IMMUNOMODULATION

PUBN-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
STOCKINGER, HANNES	AT
WILLE, STEFAN	AT
SZEKERES, ANDREAS	AT
MAJDIC, OTTO	AT
PRAGER, ELISABETH	AT
STAFFLER, GUENTHER	AT
STOECKL, JOHANNES	AT
KUNTHALERT, DUANGKAMOL	TH
PRIESCHL, EVA E	AT
BAUMRUKER, THOMAS	AT
BURTSCHER, HELMUT	AT
ZLABINGER, GERHARD J	AT
KNAPP, WALTER	AT

INT-CL (IPC): C12 N 0/

ABSTRACT:

CHG DATE=20030702 STATUS=O>CDw92 is a cell surface protein with a size of 70 kDa which is expressed on numerous leukocytes and endothelial cells. The invention relates to a method for the molecular cloning of the CDw92 molecule using a highly

efficient retroviral expression cloning system. Sequence analysis of the CDw92 cDNA established a length of 2679 base pairs. The open reading frame (ORF) having a size of 1959 bp contains the code for a protein with 652 AA. A computer-assisted analysis of the protein sequence of CDw92 established 10 transmembrane domains, three potential N glycosylation sites and one section in the C-terminal domain that is related to ITM (immunoreceptor tyrosine-based inhibitory motif). A comparison of the sequence of the CDw92 clone hereby found with various data base entries had the result that it is a C-terminal variant of the human choline transporter-like protein 1 that belongs to a family of surface proteins with several transmembrane domains recently identified. It was furthermore found that CDw92 is stably expressed on the surface of monocytes, PBLs and endothelial cells since so far no modulation of expression could be established for these cells using various stimulating substances. Contrary to this factor-independent expression of CDw92, a specific regulation of CDw92 was detected on the surface of monocyte-derived dendritic cells (Mo-DCs). During maturation of the Mo-DCs under the influence of ionomycine or calcium ionophore a down-regulation of CDw92 was observed and a specific new expression took place when these cells were incubated with IL-10. The addition of CDw92-mAks VIM15b to LPS-treated Mo-DCs led to an increase in LPS-induced IL-10 production by 2.8. In summary, these data furnish evidence for the critical role of the CDw92 protein for the field of biology and the regulation of the function of leukocytes, especially of dendritic cells.

☑ 27. Document ID: EP 1236739 A2

L14: Entry 27 of 39 File: EPAB Sep 4, 2002

PUB-NO: EP001236739A2
DOCUMENT-IDENTIFIER: EP 1236739 A2
TITLE: 59914 and 59921 Choline transporters and uses therefore

PUBN-DATE: September 4, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
CURTIS, RORY A J	US

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C07 K 16/18; G01 N 33/50; G01 N 33/53; C12 Q 1/68
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20021002 STATUS=O> The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☑ 28. Document ID: EP 1207200 A1

L14: Entry 28 of 39 File: EPAB May 22, 2002

PUB-NO: EP001207200A1
DOCUMENT-IDENTIFIER: EP 1207200 A1
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	JP
OKUDA, TAKASHI	JP

INT-CL (IPC): C12 N 15/12; C07 K 14/47; C12 Q 1/68; C07 K 19/00; C07 K 16/18; C12 N 5/10; A61 K 38/17; A61 K 45/00; A61 P 25/28; G01 N 33/53; A01 K 67/027
EUR-CL (EPC): C07K014/705; C07K014/435, G01N033/50 , G01N033/68 , G01N033/68

ABSTRACT:

Full | Title | Citation | Front | Rev | Classification | Date | Reference | Claims | KWIC | Draw. Desc

☑ 29. Document ID: WO 132704 A1

L14: Entry 29 of 39 File: EPAB May 10, 2001

PUB-NO: WO000132704A1
DOCUMENT-IDENTIFIER: WO 132704 A1
TITLE: CHOLINE TRANSPORTER LIKE (CTL) MEMBRANE PROTEINS INVOLVED IN CHOLINE TRANSPORT

PUBN-DATE: May 10, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
O'REGAN, SEANA	FR
MEUNIER, FRANCOIS	FR
TRAIFFORT, ELISABETH	FR
RUAT, MARTIAL	FR

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C12 N 5/06; C07 K 16/18; C12 N 15/11; C12 Q 1/68; A61 K 38/17; A61 P 25/00
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20010601 STATUS=O>The invention concerns the identification of a novel family of CTL (Choline Transporter Like) genes, in particular hCTL1 and hCTL2, involved in the metabolism and/or transport of choline in cells such as the intestinal tract cells, nervous cells, in particular motoneurons, sensitive neurons,

neurons of the nucleus dorsalis of the spinal cord and oligodendrocytes. The invention opens up new prospects in particular for the treatment of familial dysautonomia, and Tangier disease. More generally, the identification of CTL genes enables to develop new strategies for treating diseases of the nervous system, in particular neurodegenerative, demyelenating diseases, particularly Alzheimer disease, Parkinson disease and Huntington disease.

☑ 30. Document ID: US 20040048261 A1

L14: Entry 30 of 39 File: DWPI Mar 11, 2004

DERWENT-ACC-NO: 2004-226193
DERWENT-WEEK: 200421
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TITLE: Novel Drosophila melanogaster choline transporter (dmCHT) polypeptide, useful for characterizing pathways involving dmCHT, and for identifying potential pesticides

INVENTOR: RAMING, K

PRIORITY-DATA: 2002US-0241784 (September 11, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040048261 A1	March 11, 2004		031	C12Q001/68

INT-CL (IPC): A01 K 67/33; C07 H 21/04; C07 K 14/705; C12 Q 1/68

ABSTRACTED-PUB-NO: US20040048261A
BASIC-ABSTRACT:

NOVELTY - A Drosophila melanogaster choline transporter (dmCHT) polypeptide (I), comprising a 610 amino acid sequence (S1), given in the specification, an amino acid sequence (S2) having 100 % sequence similarity with at least 215 contiguous amino acids of (S1), or an amino acid sequence (S3) having 80 % sequence similarity with (S1), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated nucleic acid (II) or its complement, comprising a nucleotide sequence encoding (S2) or a nucleotide sequence encoding a functionally active choline transporter which comprises (S3), where (II) is less than 15 kb;

(2) a vector (III) comprising (II) or its complement;

(3) a host cell (IV) comprising (III);

(4) producing (I);

(5) an animal (V) genetically altered to express or mis-express dmCHT, or its progeny which has inherited that dmCHT expression or mis-expression mutation;

(6) studying (M1) dmCHT activity, comprising:

(a) detecting the phenotype caused by expression or mis-expression of dmCHT in (V),

where dmCHT comprises (S2) or (S3), or detecting the phenotype caused by expression or mis-expression of dmCHT in a first animal which is genetically altered as (V);

(b) detecting the phenotype of a second animal having the same genetic mutation as the first animal and a mutation in a gene of interest; and

(c) observing a difference between the phenotype of first animal and the phenotype of second animal, where a difference identifies the gene of interest capable of modifying the function of the gene encoding the dmCHT;

(7) a biopesticide (VI) comprising (II) or its complement, or (III);

(8) an antibody which specifically binds to (I) having (S2) or an amino acid sequence having 100% sequence similarity with (S1); and

(9) controlling the growth of a pest, involves applying biopesticide to the pest and/or its locus, where the biopesticide comprises isolated nucleic acid or its complement having nucleotide sequence (S4) encoding (I) comprising (S1), or a vector comprising nucleic acid or its complement having (S4), where the isolated nucleic acid is less than 15 kbase.

USE - (I) is useful for detecting a compound which interacts with dmCHT or its fragments, which involves exposing (I) comprising (S2) or (S3) to a compound, and detecting one interaction between the compound and (I), where the compound comprises a putative pesticide or pharmaceutical agent. The exposing, involves administering a compound to cultured host cells or animal genetically altered to express the dmCHT or its fragment. The administering comprises bathing, feeding, injecting or contacting. The compound is a putative pesticide and where detecting involves observing modulations of dmCHT activity resulting in animal lethality. (V) is useful for studying the activity of dmCHT. (VI) is useful for controlling the growth of a test, which involves applying (VI) to the pest and/or its locus. The animal is chosen from insects, arachnids and worms, such as Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Blattoidea, Dermaptera, Isoptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Spodoptera, Hymenoptera, Diptera, Siphonaptera, Arachnida, Acarinan or nematodes. The animal is chosen from Scistocerca sp., Blattella germanica, Bemisia tabaci, Myzus sp., Plodia interpunctella, Pectinophora gossypiella, Plutella sp., Heliothis sp., Leptinotarsa, Diabrotica sp., Anthonomus sp., Tribolium sp., Anopheles sp., Ctenocephalides felis, Amblyoma americanum, Meloidogyne sp. and Heterodera glycinii. (All claimed.) (I) is useful in genetic screening methods to characterize pathways which involve dmCHT, and other interacting genetic pathways. (I) and (II) are useful in identifying potential pesticides. (V) is useful in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of interaction with (I).

☑ 31. Document ID: US 20030114399 A1

L14: Entry 31 of 39 File: DWPI Jun 19, 2003

DERWENT-ACC-NO: 2003-810914
DERWENT-WEEK: 200376
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TITLE: Novel isolated polynucleotide encoding human or mouse high affinity choline transporter polypeptide, useful in gene therapy to increase cholinergic function in a cell of a patient suffering from Alzheimer's disease

INVENTOR: APPARSUNDARAM, S; BLAKELY, R D ; FERGUSON, S

PRIORITY-DATA: 2001US-0911077 (July 23, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20030114399 A1	June 19, 2003		074	A61K048/00

INT-CL (IPC): A61 K 48/00; C07 H 21/04; C07 K 14/47; C12 N 5/06; C12 P 21/02

ABSTRACTED-PUB-NO: US20030114399A
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) encoding a polypeptide having a fully defined human or mouse high affinity choline transporter (referred as hCHT and mCHT) polypeptide sequence (S1) of 580 amino acids, respectively as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a recombinant host cell (II) comprising a DNA segment encoding an isolated human or mouse choline transporter;

(2) a recombinant vector (III) comprising a DNA segment encoding a human or mouse choline transporter polypeptide under the control of a promoter;

(3) a purified and isolated polynucleotide (IV) which comprises a sequence identical or complementary to 14-100 contiguous nucleotides of a fully defined human or mouse choline transporter encoding polynucleotide sequence (S2);

(4) a purified peptide (V) comprising at least 10 contiguous amino acids of (S1);

(5) an antibody (VI) that immunologically binds to a protein or peptide encoded by human CHT polynucleotide sequence, or to a CHT protein or peptide that includes hCHT polypeptide sequence;

(6) a nucleic acid detection kit comprising in suitable container unit, an isolated human choline transporter nucleic acid segment and a detection reagent;

(7) a transgenic mouse (VII) lacking at least one functional mouse choline receptor allele;

(8) a transgenic mouse (VIII) whose genome comprises CHT-encoding DNA segment under the control of a heterologous promoter; and

(9) a transgenic mouse (IX) in which at least one mCHT allele is operably linked to a detectable label;

(10) a method for screening cholinergic therapeutics which involves obtaining a candidate substance, obtaining (II) comprising a polynucleotide encoding a human or mouse choline transporter (CHT) polypeptide and a promoter heterologus to the polypeptide coding region, where the promoter directs expression of the CHT polypeptide, combining candidate substance with the cell, and determining whether the candidate substance modulates high-affinity choline uptake.

ACTIVITY - Antiparkinsonian; Anticonvulsant; Nootropic; Neuroprotective; Neuroleptic; Muscular-Gen.

No supporting data is given.

MECHANISM OF ACTION - Gene therapy; Increases cholinergic function in cell; Modulator of high affinity choline uptake.

USE - (I) that encodes hCHT, is useful for expressing hCHT recombinantly which

involves preparing a recombinant vector in which a human choline transporter encoding the DNA segment is positioned under the control of a promoter, introducing the recombinant vector into a host cell, culturing the host cell under conditions effective to allow expression of the encoded protein or peptide, and collecting the expressed protein or peptide.

(I) that encodes hCHT when delivered to a cell, increases cholinergic function in a cell that is in a patient having Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis.

The candidate substance comprises treating a neuromuscular, autonomic or central nervous system disorder of the patient e.g., Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis (all claimed).

(VI) is useful for controlling transporter CHT proteins to the brain, and for treating the above mentioned diseases. The antibody is also useful for diagnosing the above mentioned disorders and to detect the influence of cholinergic signaling.

☑ 32. Document ID: WO 2003040286 A2

L14: Entry 32 of 39 File: DWPI May 15, 2003

DERWENT-ACC-NO: 2003-441535
DERWENT-WEEK: 200341
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TITLE: New human protein CDw92, useful for regulating function of leucocytes and the immune system, its modulators and organisms containing it

INVENTOR: BAUMRUKER, T; BURTSCHER, H ; KNAPP, W ; KUNTHALERT, D ; MAJDIC, O ; PRAGER, E ; PRIESCHL, E E ; STAFFLER, G ; STOCKINGER, H ; STOECKL, J ; SZEKERES, A ; WILLE, S ; ZLABINGER, G J

PRIORITY-DATA: 2001AT-0001744 (November 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003040286 A2	May 15, 2003	G	040	C12N000/00

INT-CL (IPC): C12 N 0/00

ABSTRACTED-PUB-NO: WO2003040286A
BASIC-ABSTRACT:

NOVELTY - The sequence of human protein CDw92, comprising an obligate function in the immune system, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an organism that expresses (I), or its mutant form that has an immune-regulating function;

(2) the immune-regulating, especially immune-system inhibiting, function of (I); and

(3) substances (A), e.g. natural or synthetic ligands, that are agonists or antagonists of the function of CDw92, such as antibodies raised against CDw92.

ACTIVITY - Immunomodulatory; Immunosuppressive.

No suitable data given.

MECHANISM OF ACTION - Modulating activity of protein CDw92 that may be:

(a) a component of the immunoreceptor tyrosine-based inhibitory motif-mediated signal transduction cascade; or

(b) a choline transporter, for synthesis of membrane phospholipids in immune system cells.

USE - (I), or its modulators, e.g. specific antibodies, are useful for regulating the function of leucocytes, particularly dendritic cells, possibly for therapeutic regulation of the immune system.

☑ 33. Document ID: EP 1415651 A1, WO 2003013522 A1

L14: Entry 33 of 39 File: DWPI May 6, 2004

DERWENT-ACC-NO: 2003-239565
DERWENT-WEEK: 200430
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TITLE: Agents for increasing choline transporter count on cell membrane surface for treating cholinergic neuropathy e.g. Alzheimer's disease, myasthenia gravis, glaucoma comprises tricyclic heterocycle compound

INVENTOR: BESSHO, T; TAKASHINA, K

PRIORITY-DATA: 2001JP-0238476 (August 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1415651 A1	May 6, 2004	E	000	A61K031/4355
WO 2003013522 A1	February 20, 2003	J	049	A61K031/4355

INT-CL (IPC): A61 K 31/4355; A61 P 21/04; A61 P 25/00; A61 P 25/14; A61 P 25/16; A61 P 25/20; A61 P 25/28; A61 P 27/06; A61 P 43/00; C07 D 491/048; C07 D 495/04

ABSTRACTED-PUB-NO: WO2003013522A
BASIC-ABSTRACT:

NOVELTY - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound (I).

DETAILED DESCRIPTION - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound of formula (I) or its acid addition salts, hydrates or solvates.

R1 = 2-6C alkyl or CH2N(R2)R3;

R2 = H or acetyl;

R3 = 1-6C alkyl, cycloalkyl or CHR4COOR5;

R4, R5, R6 = H or 1-6C alkyl; or

N(R2)R3 = 1-pyrrolidon-2-yl, imidazol-1-yl or 2,4-dioxo-(5-R6)-imidazolin-- yl;

ring A = (CH2)3, (CH2)4, CH=CH-CH=CH, SCH=CH, C(R7)=C(R8)S, C(R9)=C(R10)O, CH=CH-CH=N, CH=CH-N=CH or N=C(R11)O;

R7-R11 = H or 1-4C alkyl;

ring B = (CH2)3, CH(Q)CH2CH2CH(Q1), CH2C(R12)(R13)CH2CH2, CH=C(R14)CH2CH2 or CH2N(R15)CH2CH2;

Q, Q1 = H; or

Q+Q1 = CH2 or CH2CH2 as bridging group;

R12-R14 = H or 1-4C alkyl; or

R12+R13 = (CH2)n or O(CH2)mO;

n = 2-6;

m = 2 or 3;

R15 = H or aralkyl; and

provided that:

(a) when ring B is CH(Q)CH2CH2CH(Q1) or CH2N(R15)CH2CH2, then Q, Q1 is H or Q+Q1 is CH2, and

(b) when ring A is CH=CH-CH=CH, then R7 is not H (sic).

INDEPENDENT CLAIMS are also included for:

(1) agents for treating or preventing cholinergic neuropathy comprising (I); and

(2) a method of screening compounds for use in treating and preventing cholinergic neuropathy using the transporter count on the cell membrane surface as an indication.

ACTIVITY - Neuroprotective; Nootropic; Muscular-Gen.; Ophthalmological; CNS-Gen.

In an AF64A-induced cholinergic neuropathy model in Wistar rats 2-(2-oxopyrrolidin-1-yl)-N-(2,3-dimethyl-5,6,7,8-tetrahydrofuro(2,3-b)qui- nolin-4-yl)acetamide (Ia) at 3 mg/kg p.o. significantly (p is less than 0.01) increased choline uptake after 24 hours, 48 hours, 8 days and 16 days.

MECHANISM OF ACTION - Parasympathomimetic.

USE - For increasing the choline transporter count on the cell membrane surface useful for treating or preventing cholinergic neuropathy such as Alzheimer's disease, myasthenia gravis, glaucoma and circadian rhythm disorders.

ADVANTAGE - Can be administered twice a day or less without consideration of blood half life of compound, improving patient compliance and relieving load of caregiver.

☑ 34. Document ID: US 6500643 B1

DERWENT-ACC-NO: 2003-361535
DERWENT-WEEK: 200334
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TITLE: Novel isolated polynucleotide (I) that encodes high affinity choline transporter protein, useful for preventing, treating or ameliorating neurological and cognitive disorders such as Alzheimer's or Parkinson's disease

INVENTOR: GU, Y; HE, Y ; MILLARD, W J ; WU, D

PRIORITY-DATA: 2000US-0657252 (September 7, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6500643 B1	December 31, 2002		019	C07K001/00

INT-CL (IPC): C07 H 21/04; C07 K 1/00; C12 N 1/20; C12 P 21/06; G01 N 33/566

ABSTRACTED-PUB-NO: US 6500643B
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) which encodes a high affinity choline transporter (HACT) protein having a sequence (S1) comprising 580 amino acids fully defined in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (II) that encodes a polypeptide fragment consisting of at least about 50 amino acids of a HACT protein having S1;

(2) a composition (III) comprising (II) and a pharmaceutically acceptable carrier;

(3) a vector (IV) comprising (II);

(4) a composition (V) comprising (IV) and a vector comprising a polynucleotide which comprises at least about 12 contiguous nucleic acids of a polynucleotide having a sequence (S2) of 1893 base pairs fully defined in the specification;

(5) a recombinant host cell (VI) which comprises (IV);

(6) producing (M1) a recombinant cell that expresses a HACT polypeptide, or its fragment consisting of at least about 50 amino acids of S1, by transfecting a cell with a vector comprising (I) or (II); and

(7) producing (M2) a HACT polypeptide, or its fragment consisting of at least abut 50 amino acids of S1, by expressing the polypeptide in (VI).

ACTIVITY - Analgesic; Relaxant; Anticonvulsant; Cerebroprotective; Tranquilizer; Vulnerary; Neuroprotective; Nootropic; Anti-HIV; Antiparkinsonian; Antiaddictive; Neuroleptic.

MECHANISM OF ACTION - Gene therapy.

No supporting data is given.

USE - (I) is useful as a probe or primer to detect the presence of HACT polynucleotide in a sample, such as a biological sample, or for screening for test agents which bind to (I). A pharmaceutical composition comprising (I) is useful for preventing, treating or ameliorating neurological and cognitive disorders such as

pain, spasticity, myoclonus, muscle spasm, muscle hyperactivity, epilepsy, stroke, head trauma, neuronal cell death, multiple sclerosis, spinal cord injury, dystonia, Alzheimer's disease, myasthenia gravis, multi-infarct dementia, AIDS dementia, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis (ALS), attention deficit disorder, nicotine addiction, organic brain syndromes, schizophrenia or memory disorders.

☑ 35. Document ID: EP 1236739 A2, US 20030022195 A1

L14: Entry 35 of 39 File: DWPI Sep 4, 2002

DERWENT-ACC-NO: 2002-585600
DERWENT-WEEK: 200427
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TITLE: Nucleic acid molecules encoding choline transporters designated 59914 and 59921 useful for diagnostics and therapeutics

INVENTOR: CURTIS, R A J

PRIORITY-DATA: 2001US-267076P (February 1, 2001), 2002US-0062937 (January 31, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1236739 A2	September 4, 2002	E	082	C07K014/47
US 20030022195 A1	January 30, 2003		000	C12Q001/68

INT-CL (IPC): C07 H 21/04; C07 K 14/435; C07 K 14/47; C07 K 16/18; C12 N 5/06; C12 N 15/12; C12 N 15/63; C12 P 21/02; C12 Q 1/68; G01 N 33/50; G01 N 33/53

ABSTRACTED-PUB-NO: EP 1236739A
BASIC-ABSTRACT:

NOVELTY - An isolated nucleic acid molecule, is new.

DETAILED DESCRIPTION - An isolated nucleic acid (I) molecule selected from:

(a) a nucleic acid molecule comprising a nucleotide sequence which is at least 80% identical to a 2473, 2151, 2233 or 1959 (i-iv) nucleotide sequence fully defined in the specification;

(b) a nucleic acid molecule comprising a fragment of at least 600 nucleotides of (i) or (ii);

(c) a nucleic acid molecule comprising a fragment of at least 1660 nucleotides of (iii) or (iv);

(d) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence of 717 (v) or 653 (vi) amino acids fully defined in the specification;

(e) a nucleic acid molecule which encodes a fragment of (v) where the fragment is at least 100 contiguous amino acids;

(f) a nucleic acid molecule which encodes a fragment of (vi) where the fragment is at least 300 contiguous amino acids; and

(g) a nucleic acid molecule which encodes a naturally occurring allelic variant of a

polypeptide comprising the amino acid sequence of (v) or (vi) where the nucleic acid molecule hybridizes to a nucleic acid molecule comprising (i-iv).

INDEPENDENT CLAIMS are also included for the following:

(1) a host cell which contains (i-iv);

(2) an isolated polypeptide (II) encoded by (i-iv) or that is (v) or (vi);

(3) an antibody which selectively binds to (II);

(4) a method for producing (II);

(5) a method for detecting the presence of (I) or (II) in a sample by contacting the sample with a compound which selectively binds to (I) or (II);

(6) kits comprising compounds which selectively binds to (I) or (II); and

(7) modulating the activity of (II) comprising contacting a polypeptide or a cell expressing (II) with a compound which binds to (II) in a sufficient concentration to modulate its activity.

ACTIVITY - Hepatotropic; Cardiant; Metabolic; Nootropic; Neuroprotective; Immunomodulatory.

MECHANISM OF ACTION - Signal Transduction.

USE - Modulating the activity of the nucleic acids and proteins may be used in the treatment of conditions usually related to them such as CNS-related disorders, liver disorders, cardiovascular disorders, autoimmune disorders and metabolic disorders.

☑ 36. Document ID: US 20040043449 A1, WO 200208391 A2, AU 200176225 A

L14: Entry 36 of 39 File: DWPI Mar 4, 2004

DERWENT-ACC-NO: 2002-217056
DERWENT-WEEK: 200417
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TITLE: Novel glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide, useful for isolating related gene from various other species, including plant species

INVENTOR: ZHENG, Z; ZOU, J

PRIORITY-DATA: 2000US-220482P (July 25, 2000), 2003US-0332995 (August 29, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040043449 A1	March 4, 2004		000	C07H021/04
WO 200208391 A2	January 31, 2002	E	053	C12N009/00
AU 200176225 A	February 5, 2002		000	C12N009/00

INT-CL (IPC): C07 H 21/04; C12 N 5/06; C12 N 9/00; C12 N 9/10; C12 P 21/02

ABSTRACTED-PUB-NO: WO 200208391A
BASIC-ABSTRACT:

NOVELTY - A glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide (I) comprising a sequence (not given in the specification), or a sequence having at least 80 % identity to it, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (YBL011w or YKR067w) (II) comprising a 2232 or 2253 base pair sequence (S), fully defined in the specification, or a complementary strand of (S), a sequence that hybridizes under stringent conditions to the protein coding regions of (S) or the complementary strand or fragments of the sequence, or a sequence which, but for the degeneracy of the genetic code, would hybridize under stringent conditions to (S);

(2) an isolated polynucleotide (III) forming a protein coding region of (I), where the region encodes a protein having glycerol-3-phosphate acyltransferase (G-3-P) or dihydroxy acetone phosphate acyltransferase (DHAP) activity;

(3) a chimeric gene (IV) comprising (II) operably linked to a regulatory element;

(4) a plant (V), or its descendent, or a part of the plant or its descendent, having a genome modified to include (IV); and

(5) identifying G-3-P or DHAP genes, by producing a cell comprising a conditional choline auxotrophic lipid mutant, where growth of the mutant is inhibited by high levels of inositol, where the mutant is capable of suppression by supplementation of choline to an inositol-containing medium, producing, as a second mutant, a choline transporter mutant, combining the first and second mutants to form a double mutant, and screening the double mutant with cloned DNA, modified for expression in the cell, to identify a G-3-P/DHAP acyltransferase encoded genes capable or restoring normal growth to the mutants.

USE - (I) is useful for modifying the lipid composition of a cell, by introducing into a cell capable of being transformed with a genetic construct comprising a first DNA expression cassette that comprises, in addition to DNA sequences required for transformation and selection in the cells, (I), operably linked to a transcriptional regulatory region, and recovering a cell which contains the genetic construct (claimed). (I) or (II) is useful for isolating related gene from various other species, including plant species, and for isolating specific G-3-P/DHAP acyltransferase. (II) is useful for modifying lipid composition in higher organisms, for isolation of similar enzymatic activities from other organisms, for identifying related homologous sequences deposited in public databases, as a hybridization probe for the identification of the related cDNA or genomic sequences from various species, for isolating plant genes encoding the same enzymatic activities, to create transgenic plants in which (I) is present at higher or lower levels than normal or in cell types or developmental stages in which they are not normally found.

☑ 37. Document ID: DE 10009055 A1

L14: Entry 37 of 39 File: DWPI Aug 30, 2001

DERWENT-ACC-NO: 2001-590709
DERWENT-WEEK: 200167
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TITLE: A new gene encoding human choline transporter, designated hCHOT is located on chromosome 2q11-13 and is useful to treat degenerative disorders such as Alzheimer's disease

INVENTOR: BOENISCH, H; BRUESS, M

PRIORITY-DATA: 2000DE-1009055 (February 28, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10009055 A1	August 30, 2001		006	C07K016/00

INT-CL (IPC): A01 K 67/00; C07 K 16/00; C12 N 15/11; C12 N 15/63

ABSTRACTED-PUB-NO: DE 10009055A
BASIC-ABSTRACT:

NOVELTY - Novel gene encoding human choline transporter, designated hCHOT and located on chromosome 2q11-13 is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) the gene inclusive of the non-translated 3' and 5' regions;

(2) transcription factors, RNA polymerase, medicine, and chemicals which affect expression of the gene;

(3) mRNA transcribed from the gene, including splice variants and isoforms;

(4) cDNA derived from the mRNA or from hCHOT gene;

(5) protein derived from the gene, mRNA or cDNA;

(6) antibodies or antisera directed against the protein or its epitope(s);

(7) an expression system capable of expressing the protein, either native or recombinant;

(8) ligand binding and screening assays on native or recombinant choline transporters, or cells or cell membranes containing the transporter;

(9) transgenic or knockout animal having changed or no expression of the receptor;

(10) gene therapy using the receptor, gene, mRNA or cDNA;

(11) diagnosing and treating disease associated with the transporter, its gene or mRNA, for example by hybridization techniques, sequencing, single-stranded conformational polymorphism (SSCP), restriction fragment length polymorphism (RFLP), Northern, southern or Western blots, expression assays, antibodies or mutation analysis; and

(12) applying or selling medicine which accelerates or slows down the transporter or transporter action for treating degenerative disease, in particular cognitive disorders such as Alzheimer's disease.

ACTIVITY - Nootropic; Neuroprotective.

No supporting data available.

MECHANISM OF ACTION - Gene therapy; antisense therapy (claimed).

No supporting data available.

USE - (I) is used to treat degenerative disease, particularly cognitive disorders such as Alzheimer's disease (disclosed).

The receptor, gene, mRNA or cDNA may be used in gene therapy. In addition, sense and antisense oligonucleotides derived from the gene may be used in diagnostics and other techniques (all claimed).

☑ 38. Document ID: JP 2003516726 W, WO 200132704 A1, FR 2800750 A1, AU 200112873 A, EP 1228091 A1

L14: Entry 38 of 39 File: DWPI May 20, 2003

DERWENT-ACC-NO: 2001-316420
DERWENT-WEEK: 200334
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TITLE: Nucleic acids encoding human choline transporter-like proteins, useful e.g. for treating and detecting neurodegenerative disorders

INVENTOR: MEUNIER, F; O'REGAN, S ; RUAT, M ; TRAIFFORT, E ; OREAGAN, S

PRIORITY-DATA: 1999FR-0013883 (November 5, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2003516726 W	May 20, 2003		075	C12N015/09
WO 200132704 A1	May 10, 2001	F	076	C07K014/47
FR 2800750 A1	May 11, 2001		000	C12N015/12
AU 200112873 A	May 14, 2001		000	C07K014/47
EP 1228091 A1	August 7, 2002	F	000	C07K014/47

INT-CL (IPC): A61 K 35/76; A61 K 38/00; A61 K 38/17; A61 K 45/00; A61 K 48/00; A61 P 1/00; A61 P 25/00; A61 P 25/02; A61 P 25/14; A61 P 25/16; A61 P 25/22; A61 P 25/28; C07 K 14/47; C07 K 16/18; C12 N 1/15; C12 N 1/19; C12 N 1/21; C12 N 5/06; C12 N 5/10; C12 N 15/09; C12 N 15/11; C12 N 15/12; C12 N 15/63; C12 Q 1/02; C12 Q 1/68; G01 N 33/15; G01 N 33/50; G01 N 33/53; G01 N 33/566

ABSTRACTED-PUB-NO: WO 200132704A
BASIC-ABSTRACT:

NOVELTY - Nucleic acids (I) encoding human choline transporter-like (hCTL) proteins, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) nucleic acid (Ia) encoding the hCTL1b, 1a or 2 polypeptides of sequences (S3) of 654 amino acids (aa), (S4) of 657 aa or (S5) of 706 aa;

(b) polypeptides (II) with at least 80% overall identity with (S3), (S4) or (S5) after optimal alignment and involved in metabolism and/or transport of choline in cells, particularly nerve cells;

(c) a vector containing (I) or (Ia);

(d) a cell transformed with the vector of (c);

(e) an antibody (Ab) that binds specifically to (II);

(f) a process for amplifying and/or detecting (I) or (Ia) using as primers and/or

probes an oligonucleotide containing at least 12 consecutive nucleotides from (I) or (Ia), or a sequence that hybridizes to them;

(g) diagnostic kit for performing method (f);

(h) a method of screening for compounds (A) that modulate (II);

(i) (A) identified by method (h); and

(j) composition containing (A) or the vector of (c) plus a vehicle.

ACTIVITY - Antineurodegeneration; anxiolytic; behavioral; hypnotic; neurological.

MECHANISM OF ACTION - Modulating metabolism and transport of choline in cells. (I) encode choline transporter-like proteins implicated in production of acetylcholine and/or membrane phospholipids.

USE - (I) is used as a source of probes and primers for amplification/detection, particularly to determine mutations in the (non-)coding regions of CTL (choline transporter-like) genes associated with genetic diseases, e.g. familial dysautonomia, Tangier disease and neurodegenerative, demyelinizing diseases, particularly Alzheimer's, Parkinson's and Huntington's; also for isolating related sequences from other species. Polypeptides (II) expressed from (I) are used to identify specific modulators (A) that are able to restore (II) activity where the (II)-encoding gene is mutated, or to inhibit (II) activity. (A), and (I) in gene therapy, are used for treating the specified diseases, also anxiety, tension and disorders of behavior, wakefulness, memory and sleep.

☑ 39. Document ID: WO 200116315 A1, EP 1207200 A1, JP 2001136976 A

L14: Entry 39 of 39 File: DWPI Mar 8, 2001

DERWENT-ACC-NO: 2001-226688
DERWENT-WEEK: 200241
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TITLE: New rat and human spinal cord high affinity choline transporters, useful in diagnosis of Alzheimer's disease and screening promoters as drugs for treating Alzheimer's disease

INVENTOR: HAGA, T; OKUDA, T

PRIORITY-DATA: 1999JP-0368991 (December 27, 1999), 1999JP-0240642 (August 27, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200116315 A1	March 8, 2001	J	090	C12N015/12
EP 1207200 A1	May 22, 2002	E	000	C12N015/12
JP 2001136976 A	May 22, 2001		037	C12N015/09

INT-CL (IPC): A01 K 67/027; A61 K 38/00; A61 K 38/17; A61 K 45/00; A61 P 25/28; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 N 15/09; C12 N 15/12; C12 P 21/02; C12 P 21/08; C12 Q 1/00; C12 Q 1/68; G01 N 33/53

ABSTRACTED-PUB-NO: WO 200116315A
BASIC-ABSTRACT:

NOVELTY - A gene (I) encoding a protein (II) with high affinity choline transporter activity, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a gene encoding a protein with a fully defined sequence (S2) of 576 amino acids (aa) as given in the specification or a biologically active protein based on S2 with some aa deleted, substituted or added;

(2) a DNA containing all or a part of a fully defined sequence (S1) of 1731 base pairs (bp) or its complementary sequence;

(3) a DNA originated from a nematode hybridizable with DNA constituting S1 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(4) a gene encoding a protein with one of 3 fully defined sequences (S4/S6/S8) of 580 aa or a biologically active protein based on S4/S6/S8 but with some aa deleted, substituted or added;

(5) a DNA containing all or a part of one of 3 fully defined sequences (S3/S5/S7) of 1743 bp or its complementary sequence;

(6) a DNA originated from a rat or human hybridizable with a DNA constituting a gene of S5 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(7) a DNA originated from a mouse hybridizable with a DNA constituting a gene of S7 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(8) a mouse-originated protein which has high affinity choline transporter activity;

(9) a protein which has an aa sequence of S2/S4/S6/S8 or a biologically active protein based on S2/S4/S6/S8 but with some amino-acids deleted, substituted or added;

(10) a fusion protein (III) obtained by bonding any of the above specified proteins with high affinity choline transporter activity and a marker protein and/or peptide tag;

(11) an antibody (IV) which can bind with the specified protein with high affinity choline transporter activity;

(12) a host cell (V) containing an expression system for expressing (II);

(13) a non-human animal (VI) that can delete or over-express (I);

(14) producing cells with deletion of (I) by transferring with the above gene or DNA;

(15) screening (expression) promoters or inhibitors of (II) by detecting and evaluating the activity of (II), the cell membrane of (V) or (V) which expresses (II) when cultured in vitro, in the presence of a sample;

(16) screening promoters or inhibitors by culturing cells obtained from (VI) with the sample for evaluating activity, or by administering the sample to the animals and detecting the expression dose, particularly by comparing with that produced in the wild-type animals;

(17) expression promoters or inhibitors screened by the above methods;

(18) a probe for diagnosis of Alzheimer disease containing all or part of (I), the

antisense chain of (I) and/or (IV).

ACTIVITY - Nootropic; neuroprotective. No supporting data is given.

MECHANISM OF ACTION - Promoter or inhibitor of high affinity choline transporters.

USE - (I) and (II) are useful for the diagnosis of diseases related to expression of (II) by comparing (I) in a sample to that of a control. Drug compositions containing (II) or expression promoters or inhibitors of (II) are useful for treating disorders characterized by abnormal levels of (II), such as Alzheimer's disease (claimed).

Terms	Documents
choline transporter	39

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Search Results - Record(s) 1 through 39 of 39 returned.

☐ 1. Document ID: US 20040106125 A1

Using default format because multiple data bases are involved.

L14: Entry 1 of 39 File: PGPB Jun 3, 2004

PGPUB-DOCUMENT-NUMBER: 20040106125
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040106125 A1

TITLE: Neurotransmission-associated proteins

PUBLICATION-DATE: June 3, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Duggan, Brendan M	Sunnyvale	CA	US	
Honchell, Cynthia D	San Carlos	CA	US	
Ison, Craig H	San Jose	CA	US	
Thangavelu, Kavitha	Sunnyvale	CA	US	
Lu, Dyung Aina M	San Jose	CA	US	
Baughn, Mariah R	Los Angeles	CA	US	
Lal, Preeti G	Santa Clara	CA	US	
Yue, Henry	Sunnyvale	CA	US	
Tang, Y Tom	San Jose	CA	US	
Warren, Bridget A	San Marcos	CA	US	
Lee, Ernestine A	Castro Valley	CA	US	
Griffin, Jennifer A	Fremont	CA	US	
Forsythe, Ian J	Edmonton	CA	CA	
Chawla, Narinder K	Union City	CA	US	
Jiang, Xin	Saratoga	CA	US	
Jackson, Alan A	Los Gatos		US	

US-CL-CURRENT: 435/6; 424/143.1, 435/320.1, 435/325, 435/69.1, 530/350, 530/388.22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWMC | Draw Desc

☐ 2. Document ID: US 20040101874 A1

L14: Entry 2 of 39 File: PGPB May 27, 2004

PGPUB-DOCUMENT-NUMBER: 20040101874
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040101874 A1

TITLE: Targets for therapeutic intervention identified in the mitochondrial proteome

PUBLICATION-DATE: May 27, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Ghosh, Soumitra S.	San Diego	CA	US	
Fahy, Eoin D.	San Diego	CA	US	
Zhang, Bing	Spring	TX	US	
Gibson, Bradford W.	Berkeley	CA	US	
Taylor, Steven W.	San Diego	CA	US	
Glenn, Gary M.	Encinitas	CA	US	
Warnock, Dale E.	San Diego	CA	US	
Gaucher, Sara P.	Castro Valley	CA	US	

US-CL-CURRENT: 435/6; 435/317.1

ABSTRACT:

Mitochondrial targets for drug screening assays and for therapeutic intervention in the treatment of diseases associated with altered mitochondrial function are provided. Complete amino acid sequences [SEQ ID NOS:1-3025] of polypeptides that comprise the human heart mitochondrial proteome are provided, using fractionated proteins derived from highly purified mitochondrial preparations, to identify previously unrecognized mitochondrial molecular components.

☑ 3. Document ID: US 20040048261 A1

L14: Entry 3 of 39 File: PGPB Mar 11, 2004

PGPUB-DOCUMENT-NUMBER: 20040048261
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040048261 A1

TITLE: Invertebrate choline transporter nucleic acids, polypeptides and uses thereof

PUBLICATION-DATE: March 11, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raming, Klaus	Leverkusen		DE	

US-CL-CURRENT: 435/6; 435/320.1, 435/348, 435/69.1, 530/350, 536/23.5, 800/8

ABSTRACT:

Nucleic acid encoding a choline transporter from Drosophila melanogaster, herein referred to as dmCHT, is provided. The dmCHT nucleic acids, fragments and derivatives thereof may be used to genetically alter animals, such as insects, arachnids, worms, or in cultured cells to result in dmCHT expression or mis-expression. The thus genetically altered animal or cell may find use in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of

interaction with the dmCHT. The genetically altered organism or cell may also find use in studying dmCHT activity and identifying other genes that modulate the function of, or interact with, the dmCHT gene.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 4. Document ID: US 20040043449 A1

L14: Entry 4 of 39 File: PGPB Mar 4, 2004

PGPUB-DOCUMENT-NUMBER: 20040043449
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040043449 A1

TITLE: Glycerol-3-phosphate/dihydroxyacetone phosphate dual substrate acyltransferases

PUBLICATION-DATE: March 4, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zou, Jitao	Saskatoon		CA	
Zheng, Zhifu	Saskatoon		CA	

US-CL-CURRENT: 435/69.1; 435/193, 435/320.1, 435/325, 536/23.2

ABSTRACT:

The present invention relates to DNA sequences encoding novel Glycerol-3-Phosphate and Dihydroxy Acetone Phosphate acyltransferase enzymes, and methods for utilizing said polynucleotides for alteration of lipid content in higher cells, in particular plant cells, as well as other purposes.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 5. Document ID: US 20040029795 A1

L14: Entry 5 of 39 File: PGPB Feb 12, 2004

PGPUB-DOCUMENT-NUMBER: 20040029795
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20040029795 A1

TITLE: Nucleic acid and corresponding protein entitled 24P4C12 useful in treatment and detection of cancer

PUBLICATION-DATE: February 12, 2004

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Raitano, Arthur B.	Los Angeles	CA	US	
Morrison, Karen Jane Meyrick	Santa Monica	CA	US	

Ge, Wangmao	Culver City	CA	US
Challita-Eid, Pia M.	Encino	CA	US
Jakobovits, Aya	Beverly Hills	CA	US

US-CL-CURRENT: 514/12; 435/6, 435/7.23, 514/44

ABSTRACT:

A novel gene 024P4C12 (also designated 24P4C12) and its encoded protein, and variants thereof, are described wherein 24P4C12 exhibits tissue specific expression in normal adult tissue, and is aberrantly expressed in the cancers listed in Table 1. Consequently, 24P4C12 provides a diagnostic, prognostic, prophylactic and/or therapeutic target for cancer. The 24P4C12 gene or fragment thereof, or its encoded protein, or variants thereof, or a fragment thereof, can be used to elicit a humoral or cellular immune response; antibodies or T cells reactive with 24P4C12 can be used in active or passive immunization.

☐ 6. Document ID: US 20030219806 A1

L14: Entry 6 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219806
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219806 A1

TITLE: Novel 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 molecules and uses therefor

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Glucksmann, Maria A.	Lexington	MA	US	
Curtis, Rory A.J.	Ashland	MA	US	
Lora, Jose M.	Arlington	MA	US	
Galvin, Katherine M.	Jamaica Plain	MA	US	
Silos-Santiago, Inmaculada	Del Mar	CA	US	

US-CL-CURRENT: 435/6; 435/183, 435/320.1, 435/325, 435/69.1, 514/12, 530/350, 530/388.1, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 and 33751 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which a 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 gene has been introduced or disrupted. The invention still further provides isolated 18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or

33751 proteins, fusion proteins, antigenic peptides and anti-18607, 15603, 69318, 12303, 48000, 52920, 5433, 38554, 57301, 58324, 55063, 52991, 59914, 59921 or 33751 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☐ 7. Document ID: US 20030219777 A1

L14: Entry 7 of 39 File: PGPB Nov 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030219777
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030219777 A1

TITLE: Identification of candidate genes for the atherosclerosis susceptibility locus (ATHS)

PUBLICATION-DATE: November 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shang, Jin	Fremont	CA	US	
Bowen, Ben	Berkeley	CA	US	

US-CL-CURRENT: 435/6; 435/196, 435/320.1, 435/325, 435/69.1, 514/12, 536/23.2, 800/14

ABSTRACT:

Genes, nucleic acids, proteins, antibodies, marker sets, and arrays for the atherosclerosis susceptibility locus (ATHS) are provided. Methods of detecting atherosclerosis susceptibility and modulating cholesterol phenotype in cells are also provided.

☐ 8. Document ID: US 20030171563 A1

L14: Entry 8 of 39 File: PGPB Sep 11, 2003

PGPUB-DOCUMENT-NUMBER: 20030171563
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030171563 A1

TITLE: Regulators of bacterial virulence factor expression

PUBLICATION-DATE: September 11, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
McNamara, Peter J.	Madison	WI	US	

US-CL-CURRENT: 536/23.1

ABSTRACT:

Genetic loci that encode polypeptides that regulate the expression of virulence factors in bacteria, particularly S. aureus. Methods of detecting the gene or gene products for purposes of detecting S. aureus or diagnosing a patient suspected of being infected by S. aureus.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 9. Document ID: US 20030143729 A1

L14: Entry 9 of 39 File: PGPB Jul 31, 2003

PGPUB-DOCUMENT-NUMBER: 20030143729
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030143729 A1

TITLE: DNA encoding taurine and GABA transporters and uses thereof

PUBLICATION-DATE: July 31, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Smith, Kelli E.	Wayne	NJ	US	
Borden, Laurence A.	Hackensack	NJ	US	
Weinshank, Richard L.	Teaneck	NJ	US	
Hartig, Paul R.	Pennington	NJ	US	

US-CL-CURRENT: 435/320.1; 435/325, 435/69.1, 536/23.2

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 10. Document ID: US 20030134301 A1

L14: Entry 10 of 39 File: PGPB Jul 17, 2003

PGPUB-DOCUMENT-NUMBER: 20030134301
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030134301 A1

TITLE: Identification and use of molecules implicated in pain

PUBLICATION-DATE: July 17, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Brooksbank, Robert Alan	Cambridge	MI	GB	
Dixon, Alistair Kerr	Cambridge		GB	
Lee, Kevin	Cambridge		GB	
Pinnock, Robert Denham	Ann Arbor		US	

US-CL-CURRENT: 435/6; 435/194, 435/7.1, 435/7.21, 800/3

ABSTRACT:

The invention relates to the use of:

(a) an isolated gene sequence that is down-regulated in the spinal cord in response to streptozocin-induced diabetes;

(b) an isolated gene sequence comprising a nucleic acid sequence of Tables I to X.

(c) an isolated gene sequence having at least 80% sequence identity with a nucleic acid sequence of Tables I to X;

(d) an isolated nucleic acid sequence that is hybridizable to any of the gene sequences according to (a), (b) or (c) under stringent hybridisation conditions;

(e) a recombinant vector comprising a gene sequence or nucleic acid sequence according to any one of (a) to (d);

(f) a host cell containing the vector according to (e);

(g) a non-human animal having in its genome an introduced gene sequence or nucleic acid sequence or a removed or down-regulated gene sequence or nucleic acid sequence according to any one of (a) to (d);

(h) an isolated polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence encoded by a nucleotide sequence according to any one of (a) to (d), or a polypeptide variant thereof with sequential amino acid deletions from the C terminus and/or the N-terminus; or

(i) an isolated polypeptide encoded by a nucleotide sequence according to any one of (a) to (d); or

(k) an isolated antibody that binds specifically to a polypeptide according to (h) or (i);

in the screening of compounds for the treatment of pain, or for the diagnosis of pain.

The invention also relates to the use of naturally occurring compounds such as

peptide ligands of the expression products of the above gene sequences and their associated signal transduction pathways for use in the treatment of pain.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☑ 11. Document ID: US 20030114399 A1

L14: Entry 11 of 39 File: PGPB Jun 19, 2003

PGPUB-DOCUMENT-NUMBER: 20030114399
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030114399 A1

TITLE: Human and mouse choline transporter cDNA

PUBLICATION-DATE: June 19, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Blakely, Randy D.	Brentwood	TN	US	
Apparsundaram, Subramaniam	Lexington	KY	US	
Ferguson, Shawn	Nashville	TN	US	

US-CL-CURRENT: 514/44; 424/93.2, 435/320.1, 435/325, 435/69.1, 530/350, 536/23.5

ABSTRACT:

Human high affinity choline transporter (CHT) cDNA was cloned from spinal cord and the primary structure and chromosomal localization have been determined. Mouse high affinity CHT cDNA was also cloned and characterized. An isolated polynucleotide, an isolated polypeptide, a recombinant host cell, a recombinant vector, a purified protein, an antibody, a nucleic acid detection kit, a method for screening cholinergic therapeutics, a method of treating a patient, a method of gene therapy and transgenic CHT mice are discussed.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw Desc

☐ 12. Document ID: US 20030082646 A1

L14: Entry 12 of 39 File: PGPB May 1, 2003

PGPUB-DOCUMENT-NUMBER: 20030082646
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030082646 A1

TITLE: Antigenic targets of autoimmune sensorineural hearing loss (AISNHL) and development of tests for diagnosis and management of AISNHL

PUBLICATION-DATE: May 1, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Carey, Thomas E.	Dexter	MI	US	

Nair, Thankam S.	Ann Arbor	MI	US
Beckman, Jennifer Gray	Falls Charch	VA	US

US-CL-CURRENT: 435/7.21; 530/389.2

ABSTRACT:

This invention relates generally to antigens reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and in particular relates to a novel antigen, Inner Ear Supporting Cell Antigen (IESCA) reactive with autoantibodies associated with autoimmune sensorineural hearing loss (AISNHL), and to methods for the detecting therapeutic outcomes in treatment of AISNHL patients, and to methods of detecting genetic lesions in genes encoding for such antigens.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des.

☑ 13. Document ID: US 20030022195 A1

L14: Entry 13 of 39 File: PGPB Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030022195
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030022195 A1

TITLE: 59914 and 59921, choline transporters and uses therefor

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Curtis, Rory A.J.	Framingham	MA	US	

US-CL-CURRENT: 435/6; 435/320.1, 435/325, 435/69.1, 530/350, 536/23.2

ABSTRACT:

The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC | Draw. Des.

☐ 14. Document ID: US 20020061279 A1

L14: Entry 14 of 39 File: PGPB May 23, 2002

PGPUB-DOCUMENT-NUMBER: 20020061279

PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020061279 A1

TITLE: 18F-labeled choline analogs

PUBLICATION-DATE: May 23, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
DeGrado, Timothy R.	Durham	NC	US	
Coleman, R. Edward	Durham	NC	US	
Baldwin, Steven W.	Durham	NC	US	
Price, David T.	Greenwood	LA	US	
Orr, Matthew D.	Durham	NC	US	
Wang, Shuyan	Durham	NC	US	

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18F-labeled choline analogs and to compositions comprising such analogs.

☐ 15. Document ID: US 20020028510 A1

L14: Entry 15 of 39 File: PGPB Mar 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020028510
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020028510 A1

TITLE: Human cord blood as a source of neural tissue for repair of the brain and spinal cord

PUBLICATION-DATE: March 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Sanberg, Paul	Spring Hill	FL	US	
Sanchez-Remos, Juan	Tampa	FL	US	
Willing, Alison	Tampa	FL	US	
Richard, Daniel D.	Sedona	AZ	US	

US-CL-CURRENT: 435/368

ABSTRACT:

The present invention relates to the use of umbilical cord blood cells from a donor

or patient to provide neural cells which may be used in transplantation. The isolated cells according to the present invention may be used to effect autologous and allogeneic transplantation and repair of neural tissue, in particular, tissue of the brain and spinal cord and to treat neurodegenerative diseases of the brain and spinal cord.

☐ 16. Document ID: US 6630125 B2

L14: Entry 16 of 39 File: USPT Oct 7, 2003

US-PAT-NO: 6630125
DOCUMENT-IDENTIFIER: US 6630125 B2

TITLE: 18F-labeled choline analogs

DATE-ISSUED: October 7, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
DeGrado; Timothy R.	Durham	NC		
Coleman; R. Edward	Durham	NC		
Baldwin; Steven W.	Durham	NC		
Price; David T.	Greenwood	NC		
Orr; Matthew D.	Durham	NC		
Wang; Shuyan	Durham	NC		

US-CL-CURRENT: 424/1.89

ABSTRACT:

The present invention relates to .sup.18 F-labeled choline analogs and to methods of using same as imaging agents (for example, as positron emission tomography (PET) imaging agents) for the noninvasive detection and localization of neoplasms and pathophysiologies influencing choline processing in the body. The invention further relates to methods of synthesizing .sup.18 F-labeled choline analogs and to compositions comprising such analogs.

30 Claims, 23 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 12

☑ 17. Document ID: US 6500643 B1

L14: Entry 17 of 39 File: USPT Dec 31, 2002

US-PAT-NO: 6500643
DOCUMENT-IDENTIFIER: US 6500643 B1

TITLE: Human high affinity choline transporter

DATE-ISSUED: December 31, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Dong-Hai	Gainesville	FL		
Gu; Yunrong	Gainesville	FL		
Millard; William James	Gainesville	FL		
He; Yun-Ju	Gainesville	FL		

US-CL-CURRENT: 435/69.1; 435/252.3, 435/320.1, 435/6, 435/7.1, 435/7.21, 436/501, 530/300, 530/350, 536/23.5

ABSTRACT:

The invention to provides human high affinity choline transporter polynucleotides and polypeptides and compositions comprising human high affinity choline transporter polynucleotides and polypeptides.

23 Claims, 2 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 2

☐ 18. Document ID: US 6225115 B1

L14: Entry 18 of 39 File: USPT May 1, 2001

US-PAT-NO: 6225115
DOCUMENT-IDENTIFIER: US 6225115 B1
**** See image for Certificate of Correction ****

TITLE: DNA encoding taurine and GABA transporters and uses thereof

DATE-ISSUED: May 1, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Weinshank; Richard L.	Teaneck	NJ		
Hartig; Paul R.	Pennington	NJ		

US-CL-CURRENT: 435/320.1; 435/252.3, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters; methods of isolating these nucleic acid molecules and vectors comprising such nucleic acid molecules as well as mammalian cells comprising such vectors. Nucleic acid probes for detecting nucleic acid molecules encoding mammalian or human GABA transporters, or mammalian or human taurine transporters; antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian GABA or taurine transporter or human GABA or taurine transporter; and antibodies to

the mammalian GABA or taurine transporters, or human GABA or taurine transporters are provided. Pharmaceutical compounds related to mammalian GABA or taurine transporters and to human GABA or taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding normal or mutant mammalian GABA or taurine transporters, or normal or mutant human GABA or taurine transporters are provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian GABA or taurine transporters, or human GABA or taurine transporters.

17 Claims, 61 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 49

☐ 19. Document ID: US 6127131 A

L14: Entry 19 of 39 File: USPT Oct 3, 2000

US-PAT-NO: 6127131
DOCUMENT-IDENTIFIER: US 6127131 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: October 3, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/7.1; 435/7.2, 435/7.21

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammamlian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic said molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter and nonhuman transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transorter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug

screening, and treatments for alleviating abnormalities associated with human glycine transporter.

8 Claims, 10 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 22

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw. Des.

☐ 20. Document ID: US 6096788 A

L14: Entry 20 of 39 File: USPT Aug 1, 2000

US-PAT-NO: 6096788
DOCUMENT-IDENTIFIER: US 6096788 A

TITLE: Antimalaria and antibabesiosis agents and pharmaceutical compositions containing such agents

DATE-ISSUED: August 1, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Vial; Henri	Montpellier			FR
Calas; Michele	Montpellier			FR
Ancelin; Marie-Laure	Saint Jean de Cuculles			FR
Giral; Louis	Montpellier			FR

US-CL-CURRENT: 514/231.8

ABSTRACT:

The invention concerns pharmaceutical compositions with antimalaria and antibabesiosis activity, the active substances of these compositions and their use for formulating antimalaria drugs.

25 Claims, 6 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 6

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWIC | Draw. Des.

☐ 21. Document ID: US 6046030 A

L14: Entry 21 of 39 File: USPT Apr 4, 2000

US-PAT-NO: 6046030
DOCUMENT-IDENTIFIER: US 6046030 A

TITLE: Human LIG-1 homolog (HLIG-1)

DATE-ISSUED: April 4, 2000

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Wu; Shujian	Levittown	PA		
Sweet; Raymond W	Bala Cynwyd	PA		
Truneh; Alemseged	West Chester	PA		

US-CL-CURRENT: 435/69.1; 435/320.1, 435/325, 536/23.1, 536/23.5

ABSTRACT:

HLIG-1 polypeptides and polynucleotides and methods for producing such polypeptides by recombinant techniques are disclosed. Also disclosed are methods for utilizing HLIG-1 polypeptides and polynucleotides in the design of protocols for the treatment of neurological disorders such as Alzheimer's disease, multiple sclerosis and abnormal neural development; endocrine disorders such as diabetes; and heart disease, among others and diagnostic assays for such conditions.

16 Claims, 0 Drawing figures
Exemplary Claim Number: 1

☐ 22. Document ID: US 5929087 A

L14: Entry 22 of 39 File: USPT Jul 27, 1999

US-PAT-NO: 5929087
DOCUMENT-IDENTIFIER: US 5929087 A
**** See image for Certificate of Correction ****

TITLE: Decahydroquinoline-based anti-cholinergic agents

DATE-ISSUED: July 27, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Efange; S. Mbua Ngale	Plymouth	MN		
Parsons; Stanley M.	Santa Barbara	CA		

US-CL-CURRENT: 514/314; 514/278, 546/154, 546/158, 546/164, 546/17

ABSTRACT:

Compounds of formula I or formula II: ##STR1## wherein R, J, and Q have any of the values defined in the specification, and their pharmaceutically acceptable salts and related radiopharmaceuticals, have anticholinergic activity, and are useful for modulating cholinergic function in mammals. Also disclosed are pharmaceutical compositions, processes for preparing compounds of formula (I) or (II) and intermediates.

15 Claims, 3 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 3

☐ 23. Document ID: US 5756348 A

L14: Entry 23 of 39 File: USPT May 26, 1998

US-PAT-NO: 5756348
DOCUMENT-IDENTIFIER: US 5756348 A

TITLE: DNA encoding a glycine transporter and uses thereof

DATE-ISSUED: May 26, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Borden; Laurence A.	Hackensack	NJ		
Branchek; Theresa	Teaneck	NJ		
Hartig; Paul R.	Princeton	NJ		
Weinshank; Richard L.	New York	NY		

US-CL-CURRENT: 435/325; 435/252.33, 435/255.1, 435/320.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding a mammalian glycine transporter, isolated nucleic acid molecules encoding a human glycine transporter, isolated proteins which are mammalian glycine transporter proteins, isolated proteins which are human glycine transporter proteins, vectors comprising isolated nucleic acid molecules encoding a mammalian or a human glycine transporter, mammalian cells comprising such vectors, antibodies directed to a mammalian glycine transporter, antibodies directed to a human glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding mammalian glycine transporter, nucleic acid probes useful for detecting nucleic acid encoding human glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a mammalian glycine transporter, antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a human glycine transporter, pharmaceutical compounds related to mammalian glycine transporter, pharmaceutical compounds related to human glycine transporter and nonhuman transgenic animals which express DNA encoding a normal or a mutant mammalian or human glycine transporter. This invention also provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with mammalian glycine transporter. This invention further provides methods for determining ligand binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with human glycine transporter.

16 Claims, 21 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 20

Full | Title | Citation | Front | Review | Classification | Date | Reference | Claims | KWMC | Draw Desc

☑ 24. Document ID: US 5658786 A

L14: Entry 24 of 39 File: USPT Aug 19, 1997

US-PAT-NO: 5658786
DOCUMENT-IDENTIFIER: US 5658786 A
**** See image for Certificate of Correction ****

TITLE: DNA encoding rat taurine transporter and uses thereof

DATE-ISSUED: August 19, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Smith; Kelli E.	Wayne	NJ		
Weinshank; Richard L.	New York	NY		
Borden; Laurence A.	Hackensack	NJ		
Hartig; Paul R.	Princeton	NJ		

US-CL-CURRENT: 435/365; 435/252.3, 435/255.1, 435/320.1, 435/325, 435/69.1, 536/23.5

ABSTRACT:

This invention provides isolated nucleic acid molecules encoding two mammalian GABA transporters, a mammalian taurine transporter and two human GABA transporters and methods of isolating these nucleic acid molecules. Further provided are vectors comprising the nucleic acid molecules as well as mammalian cells comprising such vectors, and antibodies directed to the GABA and taurine transporters. Nucleic acid probes useful for detecting nucleic acid molecules encoding GABA and taurine transporters are also provided. Antisense oligonucleotides complementary to any sequences of a nucleic acid molecule which encodes a GABA or taurine transporter are further provided. Pharmaceutical compounds related to GABA and taurine transporters are provided. Nonhuman transgenic animals which express DNA encoding a normal or a mutant GABA or taurine transporter are also provided. Further provided are methods for determining substrate binding, detecting expression, drug screening, and treatments for alleviating abnormalities associated with GABA and taurine transporters.

13 Claims, 39 Drawing figures
Exemplary Claim Number: 1
Number of Drawing Sheets: 37

☑ 25. Document ID: JP 2001136976 A

L14: Entry 25 of 39 File: JPAB May 22, 2001

PUB-NO: JP02001136976A
DOCUMENT-IDENTIFIER: JP 2001136976 A
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	
OKUDA, TAKASHI	

INT-CL (IPC): C12 N 15/09; A01 K 67/027; A61 K 38/00; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 P 21/02; C12 P 21/08; C12 Q 1/00

ABSTRACT:

PROBLEM TO BE SOLVED: To obtain a protein exhibiting physiologically important high affinity choline transporter activity, a gene encoding the protein and a method for screening out a high affinity choline transporter activity-facilitating substance by using them.

SOLUTION: The nematode high affinity choline transporter cDNA (cho-1) is identified by means of investigating high affinity choline incorporation activity by a Xenopus oocyte expression system on a Na+ dependent transporter cDNA predicted from the genomic sequence of nematode (C. elegans) and the rat high affinity choline transfer cDNA (CHT 1) from the rat spinal cord is cloned by using the homology between the base sequences of the cho-1 and the CHT 1 as an indication. Similarly, the human high affinity choline transporter cDNA from a human genome is cloned.

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☐ 26. Document ID: WO 3040286 A2

L14: Entry 26 of 39 File: EPAB May 15, 2003

PUB-NO: WO003040286A2
DOCUMENT-IDENTIFIER: WO 3040286 A2
TITLE: CDW92 MOLECULE INDUCED IMMUNOMODULATION

PUBN-DATE: May 15, 2003

INVENTOR-INFORMATION:

NAME	COUNTRY
STOCKINGER, HANNES	AT
WILLE, STEFAN	AT
SZEKERES, ANDREAS	AT
MAJDIC, OTTO	AT
PRAGER, ELISABETH	AT
STAFFLER, GUENTHER	AT
STOECKL, JOHANNES	AT
KUNTHALERT, DUANGKAMOL	TH
PRIESCHL, EVA E	AT
BAUMRUKER, THOMAS	AT
BURTSCHER, HELMUT	AT
ZLABINGER, GERHARD J	AT
KNAPP, WALTER	AT

INT-CL (IPC): C12 N 0/

ABSTRACT:

CHG DATE=20030702 STATUS=O>CDw92 is a cell surface protein with a size of 70 kDa which is expressed on numerous leukocytes and endothelial cells. The invention relates to a method for the molecular cloning of the CDw92 molecule using a highly

efficient retroviral expression cloning system. Sequence analysis of the CDw92 cDNA established a length of 2679 base pairs. The open reading frame (ORF) having a size of 1959 bp contains the code for a protein with 652 AA. A computer-assisted analysis of the protein sequence of CDw92 established 10 transmembrane domains, three potential N glycosylation sites and one section in the C-terminal domain that is related to ITM (immunoreceptor tyrosine-based inhibitory motif). A comparison of the sequence of the CDw92 clone hereby found with various data base entries had the result that it is a C-terminal variant of the human choline transporter-like protein 1 that belongs to a family of surface proteins with several transmembrane domains recently identified. It was furthermore found that CDw92 is stably expressed on the surface of monocytes, PBLs and endothelial cells since so far no modulation of expression could be established for these cells using various stimulating substances. Contrary to this factor-independent expression of CDw92, a specific regulation of CDw92 was detected on the surface of monocyte-derived dendritic cells (Mo-DCs). During maturation of the Mo-DCs under the influence of ionomycine or calcium ionophore a down-regulation of CDw92 was observed and a specific new expression took place when these cells were incubated with IL-10. The addition of CDw92-mAks VIM15b to LPS-treated Mo-DCs led to an increase in LPS-induced IL-10 production by 2.8. In summary, these data furnish evidence for the critical role of the CDw92 protein for the field of biology and the regulation of the function of leukocytes, especially of dendritic cells.

☑ 27. Document ID: EP 1236739 A2

L14: Entry 27 of 39 File: EPAB Sep 4, 2002

PUB-NO: EP001236739A2
DOCUMENT-IDENTIFIER: EP 1236739 A2
TITLE: 59914 and 59921 Choline transporters and uses therefore

PUBN-DATE: September 4, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
CURTIS, RORY A J	US

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C07 K 16/18; G01 N 33/50; G01 N 33/53; C12 Q 1/68
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20021002 STATUS=O> The invention provides isolated nucleic acids molecules, designated 59914 and 59921 nucleic acid molecules, which encode choline transporter family members. The invention also provides antisense nucleic acid molecules, recombinant expression vectors containing 59914 and 59921 nucleic acid molecules, host cells into which the expression vectors have been introduced, and nonhuman transgenic animals in which 59914 and 59921 genes have been introduced or disrupted. The invention still further provides isolated 59914 and 59921 proteins, fusion proteins, antigenic peptides and anti-59914 and 59921 antibodies. Diagnostic and therapeutic methods utilizing compositions of the invention are also provided.

☑ 28. Document ID: EP 1207200 A1

L14: Entry 28 of 39 File: EPAB May 22, 2002

PUB-NO: EP001207200A1
DOCUMENT-IDENTIFIER: EP 1207200 A1
TITLE: HIGH AFFINITY CHOLINE TRANSPORTER

PUBN-DATE: May 22, 2002

INVENTOR-INFORMATION:

NAME	COUNTRY
HAGA, TATSUYA	JP
OKUDA, TAKASHI	JP

INT-CL (IPC): C12 N 15/12; C07 K 14/47; C12 Q 1/68; C07 K 19/00; C07 K 16/18; C12 N 5/10; A61 K 38/17; A61 K 45/00; A61 P 25/28; G01 N 33/53; A01 K 67/027
EUR-CL (EPC): C07K014/705; C07K014/435, G01N033/50 , G01N033/68 , G01N033/68

ABSTRACT:

☑ 29. Document ID: WO 132704 A1

L14: Entry 29 of 39 File: EPAB May 10, 2001

PUB-NO: WO000132704A1
DOCUMENT-IDENTIFIER: WO 132704 A1
TITLE: CHOLINE TRANSPORTER LIKE (CTL) MEMBRANE PROTEINS INVOLVED IN CHOLINE TRANSPORT

PUBN-DATE: May 10, 2001

INVENTOR-INFORMATION:

NAME	COUNTRY
O'REGAN, SEANA	FR
MEUNIER, FRANCOIS	FR
TRAIFFORT, ELISABETH	FR
RUAT, MARTIAL	FR

INT-CL (IPC): C07 K 14/47; C12 N 15/12; C12 N 15/63; C12 N 5/06; C07 K 16/18; C12 N 15/11; C12 Q 1/68; A61 K 38/17; A61 P 25/00
EUR-CL (EPC): C07K014/47

ABSTRACT:

CHG DATE=20010601 STATUS=O>The invention concerns the identification of a novel family of CTL (Choline Transporter Like) genes, in particular hCTL1 and hCTL2, involved in the metabolism and/or transport of choline in cells such as the intestinal tract cells, nervous cells, in particular motoneurons, sensitive neurons,

neurons of the nucleus dorsalis of the spinal cord and oligodendrocytes. The invention opens up new prospects in particular for the treatment of familial dysautonomia, and Tangier disease. More generally, the identification of CTL genes enables to develop new strategies for treating diseases of the nervous system, in particular neurodegenerative, demyelenating diseases, particularly Alzheimer disease, Parkinson disease and Huntington disease.

☑ 30. Document ID: US 20040048261 A1

L14: Entry 30 of 39 File: DWPI Mar 11, 2004

DERWENT-ACC-NO: 2004-226193
DERWENT-WEEK: 200421
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TITLE: Novel Drosophila melanogaster choline transporter (dmCHT) polypeptide, useful for characterizing pathways involving dmCHT, and for identifying potential pesticides

INVENTOR: RAMING, K

PRIORITY-DATA: 2002US-0241784 (September 11, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040048261 A1	March 11, 2004		031	C12Q001/68

INT-CL (IPC): A01 K 67/33; C07 H 21/04; C07 K 14/705; C12 Q 1/68

ABSTRACTED-PUB-NO: US20040048261A
BASIC-ABSTRACT:

NOVELTY - A Drosophila melanogaster choline transporter (dmCHT) polypeptide (I), comprising a 610 amino acid sequence (S1), given in the specification, an amino acid sequence (S2) having 100 % sequence similarity with at least 215 contiguous amino acids of (S1), or an amino acid sequence (S3) having 80 % sequence similarity with (S1), is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated nucleic acid (II) or its complement, comprising a nucleotide sequence encoding (S2) or a nucleotide sequence encoding a functionally active choline transporter which comprises (S3), where (II) is less than 15 kb;

(2) a vector (III) comprising (II) or its complement;

(3) a host cell (IV) comprising (III);

(4) producing (I);

(5) an animal (V) genetically altered to express or mis-express dmCHT, or its progeny which has inherited that dmCHT expression or mis-expression mutation;

(6) studying (M1) dmCHT activity, comprising:

(a) detecting the phenotype caused by expression or mis-expression of dmCHT in (V),

where dmCHT comprises (S2) or (S3), or detecting the phenotype caused by expression or mis-expression of dmCHT in a first animal which is genetically altered as (V);

(b) detecting the phenotype of a second animal having the same genetic mutation as the first animal and a mutation in a gene of interest; and

(c) observing a difference between the phenotype of first animal and the phenotype of second animal, where a difference identifies the gene of interest capable of modifying the function of the gene encoding the dmCHT;

(7) a biopesticide (VI) comprising (II) or its complement, or (III);

(8) an antibody which specifically binds to (I) having (S2) or an amino acid sequence having 100% sequence similarity with (S1); and

(9) controlling the growth of a pest, involves applying biopesticide to the pest and/or its locus, where the biopesticide comprises isolated nucleic acid or its complement having nucleotide sequence (S4) encoding (I) comprising (S1), or a vector comprising nucleic acid or its complement having (S4), where the isolated nucleic acid is less than 15 kbase.

USE - (I) is useful for detecting a compound which interacts with dmCHT or its fragments, which involves exposing (I) comprising (S2) or (S3) to a compound, and detecting one interaction between the compound and (I), where the compound comprises a putative pesticide or pharmaceutical agent. The exposing, involves administering a compound to cultured host cells or animal genetically altered to express the dmCHT or its fragment. The administering comprises bathing, feeding, injecting or contacting. The compound is a putative pesticide and where detecting involves observing modulations of dmCHT activity resulting in animal lethality. (V) is useful for studying the activity of dmCHT. (VI) is useful for controlling the growth of a test, which involves applying (VI) to the pest and/or its locus. The animal is chosen from insects, arachnids and worms, such as Isopoda, Diplopoda, Chilopoda, Symphyla, Thysanura, Collembola, Orthoptera, Blattoidea, Dermaptera, Isoptera, Anoplura, Mallophaga, Thysanoptera, Heteroptera, Homoptera, Lepidoptera, Coleoptera, Spodoptera, Hymenoptera, Diptera, Siphonaptera, Arachnida, Acarinan or nematodes. The animal is chosen from Scistocerca sp., Blattella germanica, Bemisia tabaci, Myzus sp., Plodia interpunctella, Pectinophora gossypiella, Plutella sp., Heliothis sp., Leptinotarsa, Diabrotica sp., Anthonomus sp., Tribolium sp., Anopheles sp., Ctenocephalides felis, Amblyoma americanum, Meloidogyne sp. and Heterodera glycinii. (All claimed.) (I) is useful in genetic screening methods to characterize pathways which involve dmCHT, and other interacting genetic pathways. (I) and (II) are useful in identifying potential pesticides. (V) is useful in various screening assays to identify potential innovative pesticides or therapeutic agents by virtue of interaction with (I).

☑ 31. Document ID: US 20030114399 A1

L14: Entry 31 of 39 File: DWPI Jun 19, 2003

DERWENT-ACC-NO: 2003-810914
DERWENT-WEEK: 200376
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TITLE: Novel isolated polynucleotide encoding human or mouse high affinity choline transporter polypeptide, useful in gene therapy to increase cholinergic function in a cell of a patient suffering from Alzheimer's disease

INVENTOR: APPARSUNDARAM, S; BLAKELY, R D ; FERGUSON, S

PRIORITY-DATA: 2001US-0911077 (July 23, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20030114399 A1	June 19, 2003		074	A61K048/00

INT-CL (IPC): A61 K 48/00; C07 H 21/04; C07 K 14/47; C12 N 5/06; C12 P 21/02

ABSTRACTED-PUB-NO: US20030114399A
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) encoding a polypeptide having a fully defined human or mouse high affinity choline transporter (referred as hCHT and mCHT) polypeptide sequence (S1) of 580 amino acids, respectively as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a recombinant host cell (II) comprising a DNA segment encoding an isolated human or mouse choline transporter;

(2) a recombinant vector (III) comprising a DNA segment encoding a human or mouse choline transporter polypeptide under the control of a promoter;

(3) a purified and isolated polynucleotide (IV) which comprises a sequence identical or complementary to 14-100 contiguous nucleotides of a fully defined human or mouse choline transporter encoding polynucleotide sequence (S2);

(4) a purified peptide (V) comprising at least 10 contiguous amino acids of (S1);

(5) an antibody (VI) that immunologically binds to a protein or peptide encoded by human CHT polynucleotide sequence, or to a CHT protein or peptide that includes hCHT polypeptide sequence;

(6) a nucleic acid detection kit comprising in suitable container unit, an isolated human choline transporter nucleic acid segment and a detection reagent;

(7) a transgenic mouse (VII) lacking at least one functional mouse choline receptor allele;

(8) a transgenic mouse (VIII) whose genome comprises CHT-encoding DNA segment under the control of a heterologous promoter; and

(9) a transgenic mouse (IX) in which at least one mCHT allele is operably linked to a detectable label;

(10) a method for screening cholinergic therapeutics which involves obtaining a candidate substance, obtaining (II) comprising a polynucleotide encoding a human or mouse choline transporter (CHT) polypeptide and a promoter heterologus to the polypeptide coding region, where the promoter directs expression of the CHT polypeptide, combining candidate substance with the cell, and determining whether the candidate substance modulates high-affinity choline uptake.

ACTIVITY - Antiparkinsonian; Anticonvulsant; Nootropic; Neuroprotective; Neuroleptic; Muscular-Gen.

No supporting data is given.

MECHANISM OF ACTION - Gene therapy; Increases cholinergic function in cell; Modulator of high affinity choline uptake.

USE - (I) that encodes hCHT, is useful for expressing hCHT recombinantly which

involves preparing a recombinant vector in which a human choline transporter encoding the DNA segment is positioned under the control of a promoter, introducing the recombinant vector into a host cell, culturing the host cell under conditions effective to allow expression of the encoded protein or peptide, and collecting the expressed protein or peptide.

(I) that encodes hCHT when delivered to a cell, increases cholinergic function in a cell that is in a patient having Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis.

The candidate substance comprises treating a neuromuscular, autonomic or central nervous system disorder of the patient e.g., Parkinson's disease, Huntington's disease, Alzheimer's disease, schizophrenia, dysautonomia or myasthenia gravis (all claimed).

(VI) is useful for controlling transporter CHT proteins to the brain, and for treating the above mentioned diseases. The antibody is also useful for diagnosing the above mentioned disorders and to detect the influence of cholinergic signaling.

☑ 32. Document ID: WO 2003040286 A2

L14: Entry 32 of 39 File: DWPI May 15, 2003

DERWENT-ACC-NO: 2003-441535
DERWENT-WEEK: 200341
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TITLE: New human protein CDw92, useful for regulating function of leucocytes and the immune system, its modulators and organisms containing it

INVENTOR: BAUMRUKER, T; BURTSCHER, H ; KNAPP, W ; KUNTHALERT, D ; MAJDIC, O ; PRAGER, E ; PRIESCHL, E E ; STAFFLER, G ; STOCKINGER, H ; STOECKL, J ; SZEKERES, A ; WILLE, S ; ZLABINGER, G J

PRIORITY-DATA: 2001AT-0001744 (November 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 2003040286 A2	May 15, 2003	G	040	C12N000/00

INT-CL (IPC): C12 N 0/00

ABSTRACTED-PUB-NO: WO2003040286A
BASIC-ABSTRACT:

NOVELTY - The sequence of human protein CDw92, comprising an obligate function in the immune system, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(1) an organism that expresses (I), or its mutant form that has an immune-regulating function;

(2) the immune-regulating, especially immune-system inhibiting, function of (I); and

(3) substances (A), e.g. natural or synthetic ligands, that are agonists or antagonists of the function of CDw92, such as antibodies raised against CDw92.

ACTIVITY - Immunomodulatory; Immunosuppressive.

No suitable data given.

MECHANISM OF ACTION - Modulating activity of protein CDw92 that may be:

(a) a component of the immunoreceptor tyrosine-based inhibitory motif-mediated signal transduction cascade; or

(b) a choline transporter, for synthesis of membrane phospholipids in immune system cells.

USE - (I), or its modulators, e.g. specific antibodies, are useful for regulating the function of leucocytes, particularly dendritic cells, possibly for therapeutic regulation of the immune system.

☑ 33. Document ID: EP 1415651 A1, WO 2003013522 A1

L14: Entry 33 of 39 File: DWPI May 6, 2004

DERWENT-ACC-NO: 2003-239565
DERWENT-WEEK: 200430
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TITLE: Agents for increasing choline transporter count on cell membrane surface for treating cholinergic neuropathy e.g. Alzheimer's disease, myasthenia gravis, glaucoma comprises tricyclic heterocycle compound

INVENTOR: BESSHO, T; TAKASHINA, K

PRIORITY-DATA: 2001JP-0238476 (August 6, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1415651 A1	May 6, 2004	E	000	A61K031/4355
WO 2003013522 A1	February 20, 2003	J	049	A61K031/4355

INT-CL (IPC): A61 K 31/4355; A61 P 21/04; A61 P 25/00; A61 P 25/14; A61 P 25/16; A61 P 25/20; A61 P 25/28; A61 P 27/06; A61 P 43/00; C07 D 491/048; C07 D 495/04

ABSTRACTED-PUB-NO: WO2003013522A
BASIC-ABSTRACT:

NOVELTY - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound (I).

DETAILED DESCRIPTION - Agents for increasing the choline transporter count on the cell membrane surface comprises a tricyclic heterocycle compound of formula (I) or its acid addition salts, hydrates or solvates.

R1 = 2-6C alkyl or CH2N(R2)R3;

R2 = H or acetyl;

R3 = 1-6C alkyl, cycloalkyl or CHR4COOR5;

R4, R5, R6 = H or 1-6C alkyl; or

N(R2)R3 = 1-pyrrolidon-2-yl, imidazol-1-yl or 2,4-dioxo-(5-R6)-imidazolin-- yl;

ring A = (CH2)3, (CH2)4, CH=CH-CH=CH, SCH=CH, C(R7)=C(R8)S, C(R9)=C(R10)O, CH=CH-CH=N, CH=CH-N=CH or N=C(R11)O;

R7-R11 = H or 1-4C alkyl;

ring B = (CH2)3, CH(Q)CH2CH2CH(Q1), CH2C(R12)(R13)CH2CH2, CH=C(R14)CH2CH2 or CH2N(R15)CH2CH2;

Q, Q1 = H; or

Q+Q1 = CH2 or CH2CH2 as bridging group;

R12-R14 = H or 1-4C alkyl; or

R12+R13 = (CH2)n or O(CH2)mO;

n = 2-6;

m = 2 or 3;

R15 = H or aralkyl; and

provided that:

(a) when ring B is CH(Q)CH2CH2CH(Q1) or CH2N(R15)CH2CH2, then Q, Q1 is H or Q+Q1 is CH2, and

(b) when ring A is CH=CH-CH=CH, then R7 is not H (sic).

INDEPENDENT CLAIMS are also included for:

(1) agents for treating or preventing cholinergic neuropathy comprising (I); and

(2) a method of screening compounds for use in treating and preventing cholinergic neuropathy using the transporter count on the cell membrane surface as an indication.

ACTIVITY - Neuroprotective; Nootropic; Muscular-Gen.; Ophthalmological; CNS-Gen.

In an AF64A-induced cholinergic neuropathy model in Wistar rats 2-(2-oxopyrrolidin-1-yl)-N-(2,3-dimethyl-5,6,7,8-tetrahydrofuro(2,3-b)qui- nolin-4-yl)acetamide (Ia) at 3 mg/kg p.o. significantly (p is less than 0.01) increased choline uptake after 24 hours, 48 hours, 8 days and 16 days.

MECHANISM OF ACTION - Parasympathomimetic.

USE - For increasing the choline transporter count on the cell membrane surface useful for treating or preventing cholinergic neuropathy such as Alzheimer's disease, myasthenia gravis, glaucoma and circadian rhythm disorders.

ADVANTAGE - Can be administered twice a day or less without consideration of blood half life of compound, improving patient compliance and relieving load of caregiver.

☑ 34. Document ID: US 6500643 B1

DERWENT-ACC-NO: 2003-361535
DERWENT-WEEK: 200334
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TITLE: Novel isolated polynucleotide (I) that encodes high affinity choline transporter protein, useful for preventing, treating or ameliorating neurological and cognitive disorders such as Alzheimer's or Parkinson's disease

INVENTOR: GU, Y; HE, Y ; MILLARD, W J ; WU, D

PRIORITY-DATA: 2000US-0657252 (September 7, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6500643 B1	December 31, 2002		019	C07K001/00

INT-CL (IPC): C07 H 21/04; C07 K 1/00; C12 N 1/20; C12 P 21/06; G01 N 33/566

ABSTRACTED-PUB-NO: US 6500643B
BASIC-ABSTRACT:

NOVELTY - An isolated polynucleotide (I) which encodes a high affinity choline transporter (HACT) protein having a sequence (S1) comprising 580 amino acids fully defined in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (II) that encodes a polypeptide fragment consisting of at least about 50 amino acids of a HACT protein having S1;

(2) a composition (III) comprising (II) and a pharmaceutically acceptable carrier;

(3) a vector (IV) comprising (II);

(4) a composition (V) comprising (IV) and a vector comprising a polynucleotide which comprises at least about 12 contiguous nucleic acids of a polynucleotide having a sequence (S2) of 1893 base pairs fully defined in the specification;

(5) a recombinant host cell (VI) which comprises (IV);

(6) producing (M1) a recombinant cell that expresses a HACT polypeptide, or its fragment consisting of at least about 50 amino acids of S1, by transfecting a cell with a vector comprising (I) or (II); and

(7) producing (M2) a HACT polypeptide, or its fragment consisting of at least abut 50 amino acids of S1, by expressing the polypeptide in (VI).

ACTIVITY - Analgesic; Relaxant; Anticonvulsant; Cerebroprotective; Tranquilizer; Vulnerary; Neuroprotective; Nootropic; Anti-HIV; Antiparkinsonian; Antiaddictive; Neuroleptic.

MECHANISM OF ACTION - Gene therapy.

No supporting data is given.

USE - (I) is useful as a probe or primer to detect the presence of HACT polynucleotide in a sample, such as a biological sample, or for screening for test agents which bind to (I). A pharmaceutical composition comprising (I) is useful for preventing, treating or ameliorating neurological and cognitive disorders such as

pain, spasticity, myoclonus, muscle spasm, muscle hyperactivity, epilepsy, stroke, head trauma, neuronal cell death, multiple sclerosis, spinal cord injury, dystonia, Alzheimer's disease, myasthenia gravis, multi-infarct dementia, AIDS dementia, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis (ALS), attention deficit disorder, nicotine addiction, organic brain syndromes, schizophrenia or memory disorders.

☑ 35. Document ID: EP 1236739 A2, US 20030022195 A1

L14: Entry 35 of 39 File: DWPI Sep 4, 2002

DERWENT-ACC-NO: 2002-585600
DERWENT-WEEK: 200427
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TITLE: Nucleic acid molecules encoding choline transporters designated 59914 and 59921 useful for diagnostics and therapeutics

INVENTOR: CURTIS, R A J

PRIORITY-DATA: 2001US-267076P (February 1, 2001), 2002US-0062937 (January 31, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1236739 A2	September 4, 2002	E	082	C07K014/47
US 20030022195 A1	January 30, 2003		000	C12Q001/68

INT-CL (IPC): C07 H 21/04; C07 K 14/435; C07 K 14/47; C07 K 16/18; C12 N 5/06; C12 N 15/12; C12 N 15/63; C12 P 21/02; C12 Q 1/68; G01 N 33/50; G01 N 33/53

ABSTRACTED-PUB-NO: EP 1236739A
BASIC-ABSTRACT:

NOVELTY - An isolated nucleic acid molecule, is new.

DETAILED DESCRIPTION - An isolated nucleic acid (I) molecule selected from:

(a) a nucleic acid molecule comprising a nucleotide sequence which is at least 80% identical to a 2473, 2151, 2233 or 1959 (i-iv) nucleotide sequence fully defined in the specification;

(b) a nucleic acid molecule comprising a fragment of at least 600 nucleotides of (i) or (ii);

(c) a nucleic acid molecule comprising a fragment of at least 1660 nucleotides of (iii) or (iv);

(d) a nucleic acid molecule which encodes a polypeptide comprising an amino acid sequence of 717 (v) or 653 (vi) amino acids fully defined in the specification;

(e) a nucleic acid molecule which encodes a fragment of (v) where the fragment is at least 100 contiguous amino acids;

(f) a nucleic acid molecule which encodes a fragment of (vi) where the fragment is at least 300 contiguous amino acids; and

(g) a nucleic acid molecule which encodes a naturally occurring allelic variant of a

polypeptide comprising the amino acid sequence of (v) or (vi) where the nucleic acid molecule hybridizes to a nucleic acid molecule comprising (i-iv).

INDEPENDENT CLAIMS are also included for the following:

(1) a host cell which contains (i-iv);

(2) an isolated polypeptide (II) encoded by (i-iv) or that is (v) or (vi);

(3) an antibody which selectively binds to (II);

(4) a method for producing (II);

(5) a method for detecting the presence of (I) or (II) in a sample by contacting the sample with a compound which selectively binds to (I) or (II);

(6) kits comprising compounds which selectively binds to (I) or (II); and

(7) modulating the activity of (II) comprising contacting a polypeptide or a cell expressing (II) with a compound which binds to (II) in a sufficient concentration to modulate its activity.

ACTIVITY - Hepatotropic; Cardiant; Metabolic; Nootropic; Neuroprotective; Immunomodulatory.

MECHANISM OF ACTION - Signal Transduction.

USE - Modulating the activity of the nucleic acids and proteins may be used in the treatment of conditions usually related to them such as CNS-related disorders, liver disorders, cardiovascular disorders, autoimmune disorders and metabolic disorders.

☑ 36. Document ID: US 20040043449 A1, WO 200208391 A2, AU 200176225 A

L14: Entry 36 of 39 File: DWPI Mar 4, 2004

DERWENT-ACC-NO: 2002-217056
DERWENT-WEEK: 200417
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TITLE: Novel glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide, useful for isolating related gene from various other species, including plant species

INVENTOR: ZHENG, Z; ZOU, J

PRIORITY-DATA: 2000US-220482P (July 25, 2000), 2003US-0332995 (August 29, 2003)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 20040043449 A1	March 4, 2004		000	C07H021/04
WO 200208391 A2	January 31, 2002	E	053	C12N009/00
AU 200176225 A	February 5, 2002		000	C12N009/00

INT-CL (IPC): C07 H 21/04; C12 N 5/06; C12 N 9/00; C12 N 9/10; C12 P 21/02

ABSTRACTED-PUB-NO: WO 200208391A
BASIC-ABSTRACT:

NOVELTY - A glycerol-3-phosphate/dihydroxy acetone phosphate dual substrate acyltransferase polypeptide (I) comprising a sequence (not given in the specification), or a sequence having at least 80 % identity to it, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) an isolated polynucleotide (YBL011w or YKR067w) (II) comprising a 2232 or 2253 base pair sequence (S), fully defined in the specification, or a complementary strand of (S), a sequence that hybridizes under stringent conditions to the protein coding regions of (S) or the complementary strand or fragments of the sequence, or a sequence which, but for the degeneracy of the genetic code, would hybridize under stringent conditions to (S);

(2) an isolated polynucleotide (III) forming a protein coding region of (I), where the region encodes a protein having glycerol-3-phosphate acyltransferase (G-3-P) or dihydroxy acetone phosphate acyltransferase (DHAP) activity;

(3) a chimeric gene (IV) comprising (II) operably linked to a regulatory element;

(4) a plant (V), or its descendent, or a part of the plant or its descendent, having a genome modified to include (IV); and

(5) identifying G-3-P or DHAP genes, by producing a cell comprising a conditional choline auxotrophic lipid mutant, where growth of the mutant is inhibited by high levels of inositol, where the mutant is capable of suppression by supplementation of choline to an inositol-containing medium, producing, as a second mutant, a choline transporter mutant, combining the first and second mutants to form a double mutant, and screening the double mutant with cloned DNA, modified for expression in the cell, to identify a G-3-P/DHAP acyltransferase encoded genes capable or restoring normal growth to the mutants.

USE - (I) is useful for modifying the lipid composition of a cell, by introducing into a cell capable of being transformed with a genetic construct comprising a first DNA expression cassette that comprises, in addition to DNA sequences required for transformation and selection in the cells, (I), operably linked to a transcriptional regulatory region, and recovering a cell which contains the genetic construct (claimed). (I) or (II) is useful for isolating related gene from various other species, including plant species, and for isolating specific G-3-P/DHAP acyltransferase. (II) is useful for modifying lipid composition in higher organisms, for isolation of similar enzymatic activities from other organisms, for identifying related homologous sequences deposited in public databases, as a hybridization probe for the identification of the related cDNA or genomic sequences from various species, for isolating plant genes encoding the same enzymatic activities, to create transgenic plants in which (I) is present at higher or lower levels than normal or in cell types or developmental stages in which they are not normally found.

☑ 37. Document ID: DE 10009055 A1

L14: Entry 37 of 39 File: DWPI Aug 30, 2001

DERWENT-ACC-NO: 2001-590709
DERWENT-WEEK: 200167
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TITLE: A new gene encoding human choline transporter, designated hCHOT is located on chromosome 2q11-13 and is useful to treat degenerative disorders such as Alzheimer's disease

INVENTOR: BOENISCH, H; BRUESS, M

PRIORITY-DATA: 2000DE-1009055 (February 28, 2000)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 10009055 A1	August 30, 2001		006	C07K016/00

INT-CL (IPC): A01 K 67/00; C07 K 16/00; C12 N 15/11; C12 N 15/63

ABSTRACTED-PUB-NO: DE 10009055A
BASIC-ABSTRACT:

NOVELTY - Novel gene encoding human choline transporter, designated hCHOT and located on chromosome 2q11-13 is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) the gene inclusive of the non-translated 3' and 5' regions;

(2) transcription factors, RNA polymerase, medicine, and chemicals which affect expression of the gene;

(3) mRNA transcribed from the gene, including splice variants and isoforms;

(4) cDNA derived from the mRNA or from hCHOT gene;

(5) protein derived from the gene, mRNA or cDNA;

(6) antibodies or antisera directed against the protein or its epitope(s);

(7) an expression system capable of expressing the protein, either native or recombinant;

(8) ligand binding and screening assays on native or recombinant choline transporters, or cells or cell membranes containing the transporter;

(9) transgenic or knockout animal having changed or no expression of the receptor;

(10) gene therapy using the receptor, gene, mRNA or cDNA;

(11) diagnosing and treating disease associated with the transporter, its gene or mRNA, for example by hybridization techniques, sequencing, single-stranded conformational polymorphism (SSCP), restriction fragment length polymorphism (RFLP), Northern, southern or Western blots, expression assays, antibodies or mutation analysis; and

(12) applying or selling medicine which accelerates or slows down the transporter or transporter action for treating degenerative disease, in particular cognitive disorders such as Alzheimer's disease.

ACTIVITY - Nootropic; Neuroprotective.

No supporting data available.

MECHANISM OF ACTION - Gene therapy; antisense therapy (claimed).

No supporting data available.

USE - (I) is used to treat degenerative disease, particularly cognitive disorders such as Alzheimer's disease (disclosed).

The receptor, gene, mRNA or cDNA may be used in gene therapy. In addition, sense and antisense oligonucleotides derived from the gene may be used in diagnostics and other techniques (all claimed).

☑ 38. Document ID: JP 2003516726 W, WO 200132704 A1, FR 2800750 A1, AU 200112873 A, EP 1228091 A1

L14: Entry 38 of 39 File: DWPI May 20, 2003

DERWENT-ACC-NO: 2001-316420
DERWENT-WEEK: 200334
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TITLE: Nucleic acids encoding human choline transporter-like proteins, useful e.g. for treating and detecting neurodegenerative disorders

INVENTOR: MEUNIER, F; O'REGAN, S ; RUAT, M ; TRAIFFORT, E ; OREAGAN, S

PRIORITY-DATA: 1999FR-0013883 (November 5, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 2003516726 W	May 20, 2003		075	C12N015/09
WO 200132704 A1	May 10, 2001	F	076	C07K014/47
FR 2800750 A1	May 11, 2001		000	C12N015/12
AU 200112873 A	May 14, 2001		000	C07K014/47
EP 1228091 A1	August 7, 2002	F	000	C07K014/47

INT-CL (IPC): A61 K 35/76; A61 K 38/00; A61 K 38/17; A61 K 45/00; A61 K 48/00; A61 P 1/00; A61 P 25/00; A61 P 25/02; A61 P 25/14; A61 P 25/16; A61 P 25/22; A61 P 25/28; C07 K 14/47; C07 K 16/18; C12 N 1/15; C12 N 1/19; C12 N 1/21; C12 N 5/06; C12 N 5/10; C12 N 15/09; C12 N 15/11; C12 N 15/12; C12 N 15/63; C12 Q 1/02; C12 Q 1/68; G01 N 33/15; G01 N 33/50; G01 N 33/53; G01 N 33/566

ABSTRACTED-PUB-NO: WO 200132704A
BASIC-ABSTRACT:

NOVELTY - Nucleic acids (I) encoding human choline transporter-like (hCTL) proteins, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) nucleic acid (Ia) encoding the hCTL1b, 1a or 2 polypeptides of sequences (S3) of 654 amino acids (aa), (S4) of 657 aa or (S5) of 706 aa;

(b) polypeptides (II) with at least 80% overall identity with (S3), (S4) or (S5) after optimal alignment and involved in metabolism and/or transport of choline in cells, particularly nerve cells;

(c) a vector containing (I) or (Ia);

(d) a cell transformed with the vector of (c);

(e) an antibody (Ab) that binds specifically to (II);

(f) a process for amplifying and/or detecting (I) or (Ia) using as primers and/or

probes an oligonucleotide containing at least 12 consecutive nucleotides from (I) or (Ia), or a sequence that hybridizes to them;

(g) diagnostic kit for performing method (f);

(h) a method of screening for compounds (A) that modulate (II);

(i) (A) identified by method (h); and

(j) composition containing (A) or the vector of (c) plus a vehicle.

ACTIVITY - Antineurodegeneration; anxiolytic; behavioral; hypnotic; neurological.

MECHANISM OF ACTION - Modulating metabolism and transport of choline in cells. (I) encode choline transporter-like proteins implicated in production of acetylcholine and/or membrane phospholipids.

USE - (I) is used as a source of probes and primers for amplification/detection, particularly to determine mutations in the (non-)coding regions of CTL (choline transporter-like) genes associated with genetic diseases, e.g. familial dysautonomia, Tangier disease and neurodegenerative, demyelinizing diseases, particularly Alzheimer's, Parkinson's and Huntington's; also for isolating related sequences from other species. Polypeptides (II) expressed from (I) are used to identify specific modulators (A) that are able to restore (II) activity where the (II)-encoding gene is mutated, or to inhibit (II) activity. (A), and (I) in gene therapy, are used for treating the specified diseases, also anxiety, tension and disorders of behavior, wakefulness, memory and sleep.

☑ 39. Document ID: WO 200116315 A1, EP 1207200 A1, JP 2001136976 A

L14: Entry 39 of 39 File: DWPI Mar 8, 2001

DERWENT-ACC-NO: 2001-226688
DERWENT-WEEK: 200241
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TITLE: New rat and human spinal cord high affinity choline transporters, useful in diagnosis of Alzheimer's disease and screening promoters as drugs for treating Alzheimer's disease

INVENTOR: HAGA, T; OKUDA, T

PRIORITY-DATA: 1999JP-0368991 (December 27, 1999), 1999JP-0240642 (August 27, 1999)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200116315 A1	March 8, 2001	J	090	C12N015/12
EP 1207200 A1	May 22, 2002	E	000	C12N015/12
JP 2001136976 A	May 22, 2001		037	C12N015/09

INT-CL (IPC): A01 K 67/027; A61 K 38/00; A61 K 38/17; A61 K 45/00; A61 P 25/28; C07 K 14/47; C07 K 16/18; C07 K 19/00; C12 N 5/10; C12 N 15/09; C12 N 15/12; C12 P 21/02; C12 P 21/08; C12 Q 1/00; C12 Q 1/68; G01 N 33/53

ABSTRACTED-PUB-NO: WO 200116315A
BASIC-ABSTRACT:

NOVELTY - A gene (I) encoding a protein (II) with high affinity choline transporter activity, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) a gene encoding a protein with a fully defined sequence (S2) of 576 amino acids (aa) as given in the specification or a biologically active protein based on S2 with some aa deleted, substituted or added;

(2) a DNA containing all or a part of a fully defined sequence (S1) of 1731 base pairs (bp) or its complementary sequence;

(3) a DNA originated from a nematode hybridizable with DNA constituting S1 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(4) a gene encoding a protein with one of 3 fully defined sequences (S4/S6/S8) of 580 aa or a biologically active protein based on S4/S6/S8 but with some aa deleted, substituted or added;

(5) a DNA containing all or a part of one of 3 fully defined sequences (S3/S5/S7) of 1743 bp or its complementary sequence;

(6) a DNA originated from a rat or human hybridizable with a DNA constituting a gene of S5 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(7) a DNA originated from a mouse hybridizable with a DNA constituting a gene of S7 under stringent conditions and encoding a protein with high affinity choline transporter activity;

(8) a mouse-originated protein which has high affinity choline transporter activity;

(9) a protein which has an aa sequence of S2/S4/S6/S8 or a biologically active protein based on S2/S4/S6/S8 but with some amino-acids deleted, substituted or added;

(10) a fusion protein (III) obtained by bonding any of the above specified proteins with high affinity choline transporter activity and a marker protein and/or peptide tag;

(11) an antibody (IV) which can bind with the specified protein with high affinity choline transporter activity;

(12) a host cell (V) containing an expression system for expressing (II);

(13) a non-human animal (VI) that can delete or over-express (I);

(14) producing cells with deletion of (I) by transferring with the above gene or DNA;

(15) screening (expression) promoters or inhibitors of (II) by detecting and evaluating the activity of (II), the cell membrane of (V) or (V) which expresses (II) when cultured in vitro, in the presence of a sample;

(16) screening promoters or inhibitors by culturing cells obtained from (VI) with the sample for evaluating activity, or by administering the sample to the animals and detecting the expression dose, particularly by comparing with that produced in the wild-type animals;

(17) expression promoters or inhibitors screened by the above methods;

(18) a probe for diagnosis of Alzheimer disease containing all or part of (I), the

antisense chain of (I) and/or (IV).

ACTIVITY - Nootropic; neuroprotective. No supporting data is given.

MECHANISM OF ACTION - Promoter or inhibitor of high affinity choline transporters.

USE - (I) and (II) are useful for the diagnosis of diseases related to expression of (II) by comparing (I) in a sample to that of a control. Drug compositions containing (II) or expression promoters or inhibitors of (II) are useful for treating disorders characterized by abnormal levels of (II), such as Alzheimer's disease (claimed).

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1: Methods Enzymol. 1999;303:19-44.

Related Articles,

High-efficiency full-length cDNA cloning.

Carninci P, Hayashizaki Y.

Laboratory for Genome Exploration Research Project, Genomic Sciences Cent (GSC), Ibaraki, Japan.

PMID: 10349636 [PubMed - indexed for MEDLINE]

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1: Apparsundaram S, Ferguson SM, Blakely RD. Related Articles, l

Molecular cloning and characterization of a murine hemicholinium-3-sensitiv choline transporter.
Biochem Soc Trans. 2001 Nov;29(Pt 6):711-6.
PMID: 11709061 [PubMed - indexed for MEDLINE]

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Gene. 2001 May 2;268(1-2):123-31.
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Molecular cloning of a human, hemicholinium-3-sensitive choline transporter
Biochem Biophys Res Commun. 2000 Oct 5;276(3):862-7.
PMID: 11027560 [PubMed - indexed for MEDLINE]

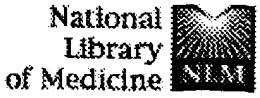
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Cocaine and antidepressant-sensitive biogenic amine transporters exist in regulated complexes with protein phosphatase 2A.
J Neurosci. 2000 Oct 15;20(20):7571-8.
PMID: 11027216 [PubMed - indexed for MEDLINE]

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High-efficiency full-length cDNA cloning.
Methods Enzymol. 1999;303:19-44. No abstract available.
PMID: 10349636 [PubMed - indexed for MEDLINE]

2: Itoh M, Kitsunai T, Akiyama J, Shibata K, Izawa M, Kawai J, Tomaru Y, Carninci P, Shibata Y, Ozawa Y, Muramatsu M, Okazaki Y, Hayashizaki Y. Related Articles, l

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Genome Res. 1999 May;9(5):463-70.
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Increased specificity of reverse transcription priming by trehalose and oligo-blockers allows high-efficiency window separation of mRNA display.
Nucleic Acids Res. 1999 Mar 1;27(5):1345-9.
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4: [No authors listed] Related Articles, l

Volume 49, number 2 (1998), in article no. GE985209 "Characterization of ge expression in mouse blastocyst using single-pass sequencing of 3995 Clones," nobuya sasaki, sumiharu nagaoka, masayoshi itoh, masaki izawa, hideaki koni piero carninci, atsushi yoshiki, moriaki kusakabe, tetsuya moriuchi, masami muramatsu, yasushi okazaki, and yoshihide hayashizaki, pages 167-179
Genomics. 1998 Dec 15;54(3):583. No abstract available.
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1: Biochem Biophys Res Commun. 2000 Oct 5;276(3):862-7. Related Articles,

FULL TEXT ARTICLE

Molecular cloning of a human, hemicholinium-3-sensitive choline transporter.

Apparsundaram S, Ferguson SM, George AL Jr, Blakely RD.

Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, Tennessee, 37232-3420, USA.

Under many physiological circumstances, Na(+)- and Cl(-)-dependent, hemicholinium-3 (HC-3)-sensitive, high-affinity choline uptake (HACU) in cholinergic neurons is thought to be rate-limiting in the biosynthesis of acetylcholine (ACh). Based on sequence information provided by the Human Genome Project and the recently reported rat CHT1 (rCHT1), we cloned a hun CHT cDNA from spinal cord. The hCHT cDNA encodes a protein of 580 amii acids having 93% identity to rCHT1 and 51% identity to the Caenorhabditis elegans homolog CHO-1, and is distantly related to members of the Na(+)-cou glucose transporter (SGLT) gene family of Na(+)-coupled glucose (SGLT), nucleoside and iodide transporters. Northern blot analysis reveals the expressic a approximately 5 kb transcript in human brain regions rich in cholinergic neu including the putamen, spinal cord, and medulla. Expression of hCHT cDNA i COS-7 cells results in saturable, Na(+)/Cl(-)-dependent choline uptake (K(m) = 1.2 microM) in membrane vesicles and [(3)H] HC-3 binding (K(d) = 4 nM) in membrane fractions, consistent with characteristics reported in mammalian cholinergic neurons. Using radiation hybrid mapping techniques, we localized hCHT gene to human chromosome 2q12. These studies elucidate the primary structure and chromosomal localization of hCHT and provide a basis for mechanistic analysis of HACU regulation and an investigation of the role of h in disease states. Copyright 2000 Academic Press.

PMID: 11027560 [PubMed - indexed for MEDLINE]

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Biochemical and Biophysical Research Communications **276**, 862–867 (2000)
doi:10.1006/bbrc.2000.3561, available online at http://www.idealibrary.com on IDEAL®

Molecular Cloning of a Human, Hemicholinium-3-Sensitive Choline Transporter

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Received August 23, 2000

Under many physiological circumstances, Na^+- and Cl^--dependent, hemicholinium-3 (HC-3)-sensitive, high-affinity choline uptake (HACU) in cholinergic neurons is thought to be rate-limiting in the biosynthesis of acetylcholine (ACh). Based on sequence information provided by the Human Genome Project and the recently reported rat CHT1 (rCHT1), we cloned a human CHT cDNA from spinal cord. The hCHT cDNA encodes a protein of 580 amino acids having 93% identity to rCHT1 and 51% identity to the *Caenorhabditis elegans* homolog CHO-1, and is distantly related to members of the Na^+-coupled glucose transporter (SGLT) gene family of Na^+-coupled glucose (SGLT), nucleoside and iodide transporters. Northern blot analysis reveals the expression of a ~5 kb transcript in human brain regions rich in cholinergic neurons including the putamen, spinal cord, and medulla. Expression of hCHT cDNA in COS-7 cells results in saturable, Na^+/Cl^--dependent choline uptake (K_m = 1.2 μM) in membrane vesicles and [^{3}H] HC-3 binding (K_d = 4 nM) in membrane fractions, consistent with characteristics reported in mammalian cholinergic neurons. Using radiation hybrid mapping techniques, we localized the hCHT gene to human chromosome 2q12. These studies elucidate the primary structure and chromosomal localization of hCHT and provide a basis for mechanistic analysis of HACU regulation and an investigation of the role of hCHT in disease states. © 2000 Academic Press

Key Words: **acetylcholine; choline; cholinergic; chromosomal mapping; gene expression; hemicholinium-3; membrane protein; transporter; gene expression.**

In the central and peripheral nervous system, cholinergic neurons regulate a variety of autonomic, cognitive and motor functions (1). Dysfunction of cholinergic signaling has been implicated in Alzheimer's disease (2), Parkinson's disease (3), schizophrenia (4), Huntington's disease (5) and dysautonomia (6). Whereas multiple low-affinity choline transport (CHT) pathways exist to provide choline for metabolic needs and membrane phospholipid synthesis, cholinergic neurons are endowed with a distinct high-affinity choline uptake (HACU) process that provides choline for the synthesis of acetylcholine (ACh) (7, 8). Selective blockade of HACU by HC-3 can reduce ACh synthesis and release *in vitro* and impair cholinergic function *in vivo* (9, 10). The activity of HACU is also highly regulated by neuronal activity, neurotransmitters and second messengers (11, 12), (13–16) and therefore serves as a potential mechanism for the modulation of cholinergic function.

HACU has been defined in the rat and human brain as a Na^+/Cl^--dependent process with a K_m of ~1 μM for choline (7, 17). Initial attempts to identify HACU at a molecular level led to the isolation and partial purification of membrane proteins of 35 to 90 kDa from Torpedo electromotor nerve terminals, as well as from insect and rat neural tissues (18–21). Mayser *et al.* (22) reported the initial cloning of a choline transporter within this gene family; however, this molecule has since been redesignated as a creatine transporter based on substrate preference and regional distribution (23, 24). More recently, O'Reagan *et al.* (25) utilized complementation of choline deficiencies in yeast to identify a novel choline transporter, CTL1. However, the distribution, ion-dependence and pharmacology of this transporter differ from that expected for presynaptic HACU. A major breakthrough in elucidating the molecular basis of HACU was achieved by Okuda and co-workers (26) who identified a choline transporter (CHO-1) expressed in the cholinergic neurons of the nematode *C. elegans.* These investigators also identified a rat homolog (rCHT1) and found the expression pattern and functional characteristics of rCHT1 to be consistent with the HACU in the rat brain (26). Using

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the sequence information of rCHT1 and the information provided by Human Genome Project, we have cloned a human ortholog hCHT and identified hybridizing mRNAs in the human brain. Transport and antagonist binding studies in COS-7 cells reveal a substrate specificity, ion-dependence and pharmacology consistent with HACU. Finally, through radiation-hybrid analysis, we map the hCHT gene to chromosome 2q12.

MATERIALS AND METHODS

Cloning of hCHT cDNA. Based on the DNA sequence information obtained from the Human Genome Sequence Database and rCHT1, we identified genomic sequences (GenBank Accession No. AC009933) predictive of a human homolog for rCHT. Based on inferred coding exons, we designed nondegenerate oligonucleotide primers to isolate an hCHT cDNA. The sense primer RB855 (ATAAAAATGG-CTTTCCATGTGGAAGGACTG) overlaps the putative start codon and extends by 16 nucleotides on the 5′ end and 11 nucleotides on the 3′ end. The antisense primer RB852 (TCACTG-TAAATTATCTTCCAGTCCCAGACCC) overlaps the putative stop codon. hCHT cDNA was amplified by PCR (5 min at 95°C followed by 35 cycles of 30 s at 95°C, 30 s at 60°C, and 4 min at 68°C and finally a 7 min extension at 68°C) using human spinal cord cDNA (Clontech) as template with Pfu Turbo DNA polymerase and the ProStar Ultra HF kit (Stratagene). The PCR amplified products were inserted between the Not1 and Xho1 sites of pcDNA3 (Invitrogen) and the sequence of the inserted cDNA was determined using fluorescent dye terminators and an ABI310 automated DNA sequencer (Center for Molecular Neuroscience and Neurogenomics Core, Vanderbilt University). The nucleotide sequence of hCHT cDNA and inferred translation can be obtained in GenBank with the Accession No. AF276871. Sequence alignments of hCHT, rCHT, and CHO-1 as well as other gene family members were performed with the MegAlign module of Lasergene software (DNASTAR).

Northern analysis. We examined the regional distribution of hCHT mRNA using the human brain multiple tissue Northern Brain Blot II panel (Clontech). A 463 bp cDNA probe corresponding to hCHT bases 1221–1684 (Kpn1/Stu1 restriction fragment) was labeled with by random priming (Prime-It II, Stratagene) in the presence of [α-^{32}P] dCTP (Amersham). Hybridization was carried out for 1 h at 68°C in Expresshyb (Clontech) with a probe concentration of 1.5×10^6 cpm/ml. The membrane was washed at high stringency (30 min at 25°C in 2× SSC 0.05% SDS followed by 1 h at 68°C in 0.1× SSC 0.1% SDS) and exposed to X-ray film (Kodak X-AR) for 112 h before development. To validate evenness of loading, the blot was reprobed using a human β-actin cDNA (Clontech) probe at 10^6 cpm/ml.

Transient expression of hCHT in COS-7 cells. COS-7 cells were transfected with a pcDNA3 vector containing hCHT cDNA using the FuGene 6 transfection reagent (Roche Diagnostics) following the manufacturer's protocols. Briefly, COS-7 cells were cultured in Dulbecco's modified Eagle medium (DMEM) supplemented with 10% fetal bovine serum (Hyclone), 100 μg/ml of penicillin and streptomycin at a density of 3–4 million cells in 150 mm culture dishes or 5×10^4 cells per well in 24-well dishes (Falcon). After 24 h, cells were transfected and 48 h later, the cells were harvested and processed for membrane binding and whole cell or vesicle transport assays.

Radioligand binding assays. Monolayers of hCHT transfected COS-7 cells were washed with 30 ml of HTE buffer and harvested in 10 ml of homogenization buffer (0.32 M sucrose in HTE buffer). Cells were homogenized at 20,000 rpm for 25 s using a Polytron tissue homogenizer (Brinkman). The homogenate was centrifuged at 100,000*g* for 45 min at 4°C. The resulting pellet was suspended in 2 ml of HTE buffer, assayed for protein content (Bradford Method; BioRad) and 50 μg of the membrane suspension (1 μg/μl) was transferred to each tube in triplicate. Unless otherwise indicated, all binding assays were performed in the presence of 150 mM NaCl in HTE buffer. Assays were initiated by the addition of [^{3}H]HC-3 (127 Ci per mmol; NEN Life Science Products, 10 nM final conc). After a 1 h incubation at room temperature, membranes were rapidly filtered through glass fiber GF/B filters (Brandel) soaked in 0.3% polyethylenimine (Sigma) in HTE buffer and accumulated radioactivity was quantified using liquid scintillation spectrometry (Packard). To test the ion dependence of hCHT binding activity, Na^+ was replaced in the assay buffer with equimolar concentrations of Li^+ whereas Cl was replaced with equimolar concentrations of isethionate. Nonspecific binding was quantified by measuring [^{3}H] HC-3 binding in the presence of 1 μM unlabeled HC-3 and subtracted from the total counts to yield specific binding. Data for binding and transport assays (see below) were analyzed using nonlinear least squares curve fitting and Scatchard transformations (Kaleidagraph, Abelbeck).

Transport assays. To assay CHT activity in resealed membrane vesicles from hCHT-transfected mammalian cells, we transiently transfected COS-7 cells with hCHT and prepared membrane fractions as described for binding assays. After obtaining the membrane fractions, resealed membrane vesicles were prepared as described by Fisher *et al.*, 1992 (27) with slight modifications. The membrane pellets were resuspended in 2 ml of HTE buffer (~2 μg/μl) and the suspension was rotated gently at 4°C for 45 min. Membrane vesicle suspensions were centrifuged (27,000*g*) for 20 min at 4°C and the resulting pellet suspended in 2 ml of Na^+ and Cl free HTE buffer. Protein content of the suspension was determined (Bradford; Bio-Rad) and 50 μg of the vesicle suspension (1 μg/μl) was transferred to each tube for triplicate assays. [^{3}H]choline transport assays were initiated by the addition of [^{3}H]choline and NaCl diluted in HTE buffer to reach a final concentration of 20 nM and 150 mM, respectively. After a 5 min incubation at room temperature, vesicles were rapidly filtered through Whatman GF/B filters soaked in 0.3% polyethylenimine in HTE buffer and the accumulated radioactivity quantified as described for binding assays. In experiments designed to determine the ion-dependence of choline transport, Na^+ was replaced with equimolar concentrations of Li^+ and Cl was replaced with equimolar concentrations of isethionate. In all experiments, nonspecific uptake was quantified by determining uptake in the presence of 1 μM HC-3 and subtracted from the total uptake to yield specific transport.

Chromosomal localization. The chromosomal localization of the hCHT gene was determined by radiation hybrid mapping (28). Briefly, oligonucleotide primers were selected to amplify a 616 bp fragment of genomic DNA corresponding to a region that overlaps with the hCHT1 stop codon. The sense primer RB885 (5′-CTGTGTATGGGCTCTGGTA CC-3′) is complementary to bases 1202–1220 of the hCHT coding sequence. The antisense primer RB934 (5′-GCTGCATACCATCTCTCC-3′) was designed based on analysis of the genomic sequence immediately 3′ from the hCHT stop codon (GenBank Accession No. AC009963). PCR mapping with RB885 and RB934 was performed using the Stanford G3 Human/Hamster Radiation Hybrid panel (Research Genetics) as template. The PCR conditions were: 5 min at 95°C followed by 35 cycles of 30 s at 95°C; 30 sec at 60°C, and 30 s at 72°C; and finally a 7 min extension at 72°C PCR products were denatured for 30 min at 37°C in a solution of 0.4 N NaOH/25 mM EDTA and blotted onto Hybond N nylon membrane (Amersham). The blot was UV cross-linked (Stratalinker, Stratagene) and then baked at 80°C under vacuum for 30 min and then hybridized with a 463-bp hCHT Kpn1/Stu1 restriction fragment (bp 1221–1684), labeled by random priming (Prime-It II, Stratagene) in the presence of [α-^{32}P] dCTP (Amersham). Hybridization was performed for 1 h at 68°C in ExpressHyb (Clontech) with a probe concentration of 10^6 cpm/ml. The membrane was washed to a final stringency of 0.1× SSC 0.1% SDS for 1 h at 68°C prior to X-ray

film development. Hybridization results were submitted for scoring on the Stanford Human Genome Center (SHGC) G3 radiation hybrid panel (http://shgc.stanford.edu/RH/index.html).

RESULTS AND DISCUSSION

Cloning of hCHT cDNA. We used the amino acid sequence of rCHT1 and searched the Human Genome Sequence Database for a potential human ortholog. Our GenBank BLAST search yielded bacterial artificial chromosome (BAC) sequences (AC009963 and AC023672) containing unannotated sequences that display 87% nucleotide identity to rCHT coding sequence with conserved translational initiation and termination sites. Using human spinal cord cDNA as template, we amplified by PCR a 1780-bp product whose sequence matches the inferred exons of the putative hCHT gene found in the BAC sequences. The presence of an in-frame stop codon in the BAC sequence (AC009963) 9 nucleotides 5′ of our predicted start codon supports the conclusion that hCHT protein initiates at the designated ATG. The hCHT cDNA encodes a protein of 580 amino acids (Fig. 1A), a predicted mass (M_r) of 63,203 Da and a calculated isoletric point of 4.9. The hCHT nucleotide and amino acid sequence can be accessed at GenBank with Accession No. AF276871.

Sequence analysis of the predicted hCHT protein using Kyte-Doolittle (29), TopPred2 (30) and Signal P (31) algorithms, predict the presence of 13 transmembrane spanning domains (Figs. 1A and 1B) and the presence of a signal peptide that would orient the initial 6 amino acids extracellularly. There are 3 canonical N-linked glycosylation residues; N69 and N301 are predicted to be localized extracellularly. It is noteworthy that SGLT1 and NIS were also originally predicted to have 12 TMDs with NH_2 and COOH terminus oriented towards the cytoplasm (32, 33). However, more recent N-linked glycosylation site mutagenesis and immunofluorescence studies reveal the presence of an extracellular NH_2 terminus (33, 34). Recently, SGLT1 has been predicted to contain 14 TMDs with the last TMD established by a hydrophobic domain at the very COOH terminus (33). Unlike SGLT1, but more like NIS, hCHT lacks such a domain, resulting in cytoplasmic COOH terminus (33, 34). Canonical sites for phosphorylation by protein kinase C are present on the putative cytoplasmic domain between TMD9 and TMD10 (S367 and S373) as well as in the COOH terminus (T558). Canonical sites for protein kinase A are also present between TMD7 and TMD8 (S263) and on the COOH terminus (S522 and S550). Moreover, there are an additional 12 serine and 10 threonine residues in predicted cytoplasmic domains of hCHT that may represent noncanonical sites for regulatory phosphorylation.

Sequence alignments reveal hCHT protein to exhibit 93% amino acid identity to rCHT1 and 51% amino acid identity to the *C. elegans* gene product CHO-1. Outside of putative species orthologs, hCHT is distantly related to the SLC5A family of solute carriers that includes the Na^+-coupled glucose transporter 1 (SGLT1; 25% AA identity) (33, 35) and the Na^+/I^--iodide symporter (NIS; 21% AA identity) (36).

Chromosomal localization. Altered cholinergic function is a feature of multiple cognitive, neuromuscular, motor and autonomic disorders (2–6, 37, 38). Assessment of the involvement of hCHT as a risk factor in such syndromes first requires the high resolution mapping of the hCHT gene. Using human and hamster genomic DNA, we defined PCR conditions such that oligonucleotide primers specifically amplify a 616-bp product from human but not from hamster templates. This allowed us to assess the distribution of human specific amplicons on the SHGC radiation human/hamster hybrid panel, with amplifications confirmed as hCHT-derived by hybridization with a hCHT cDNA probe. Our results reveal that the hCHT1 locus is tightly linked to markers D2S340 and D2S176 on chromosome 2. The proximity of hCHT to these two markers corresponds to a cytogenetic location of 2q12. In addition, a search of BAC clone RP11-368F12 (AC009963) which contains the hCHT gene, reveals that this BAC also encodes a portion of the Ran binding protein 2 (RanBP2) gene. RanBP2 has been localized with high resolution to 2q12 between D2S340 and D2S1893 by a combination of fluorescence *in situ* hybridization (FISH) analysis, sequence analysis, and physical mapping (39).

Northern analysis. To examine the distribution of hCHT mRNA in human brain, we performed a Northern analysis using a 463-bp fragment comprising the 3′ end of our hCHT1 cDNA. Our results show hCHT mRNA to exhibit a restricted regional distribution in the CNS, consistent with the distribution of cholinergic cell bodies. Thus, we detected a single transcript of ~5 kb in the putamen, spinal cord, and medulla (Fig. 1C). This pattern of expression is consistent with the distribution of cholinergic neurons including the large, aspiny interneurons of the basal ganglia and the motoneurons of the midbrain, brainstem and spinal cord (40–42). No hybridization was evident in temporal lobe, frontal lobe, occipital lobe, cerebral cortex, and cerebellum despite evidence of control hybridization products with β-actin. (Fig. 1C).

Radioligand binding assays. The radiolabeled HACU antagonist [3H]HC-3 has been used to identify CHT protein in human brain membranes (43). Using [3H]HC-3, we confirmed the presence of hCHT protein in hCHT1-transfected COS-7 membranes (Figs. 2A and 2B). As compared to vector-transfected cells, transfection of hCHT cDNA produced marked increase in [^{3}H]HC-3 binding in membrane fractions of COS-7 cells (data not shown). The binding of [^{3}H]HC-3 is saturable

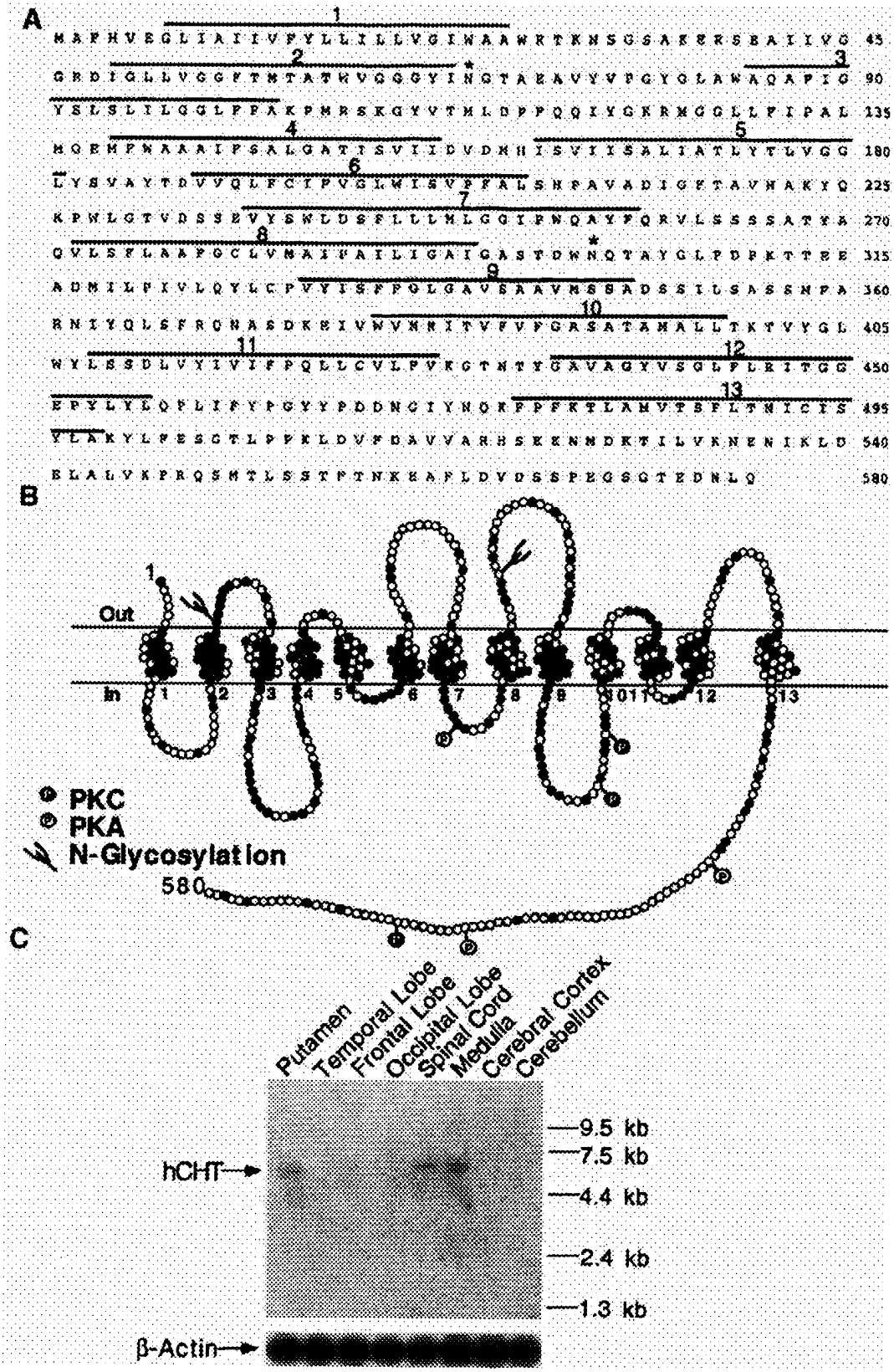


FIG. 1. Predicted hCHT amino acid, secondary structure, and pattern of expression in the human brain. (A) Amino acid sequence of the derived from hCHT. The location of 13 TMDs are shown with solid lines above the corresponding amino acid residues. Asterisks indicate potential extracellular N-glycosylation sites. (B) Predicted secondary structure of CHTs. N-linked glycosylation and consensus phosphorylation sites for PKC and PKA are indicated. Circles represent individual amino acid residues. Dark circles indicate amino acids conserved among hCHT (GenBank AF276871), rCHT1 (AB030947), and CHO-1 (AB030946). (C) Northern blot analysis of hCHT reveals a 5-kb transcript which is specifically expressed in the putamen, spinal cord, and medulla, cholinergic neuron rich brain regions. Probing for β-actin reveals that the lanes are evenly loaded.

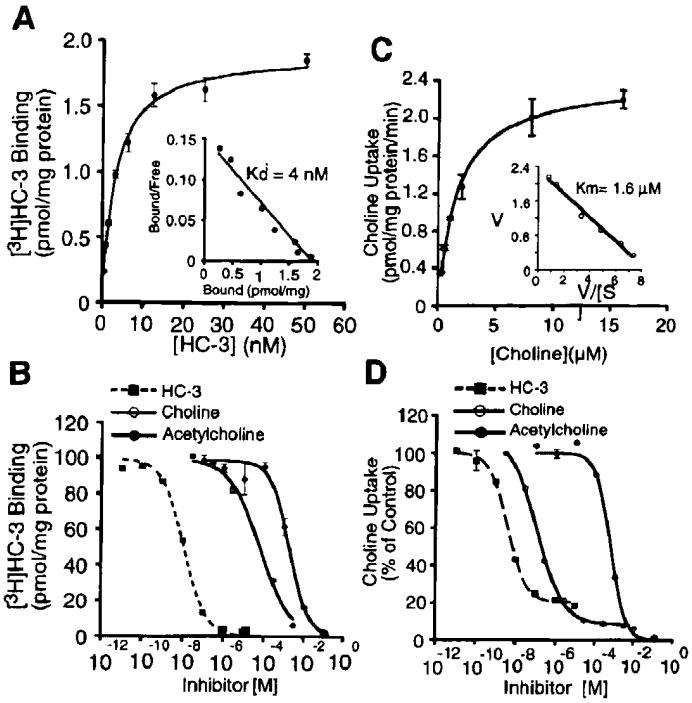


FIG. 2. [^{3}H] HC-3 binding sites and [3H]choline uptake are evident following transfection of hCHT1 in COS-7 cells. (A) Binding of [^{3}H] HC-3 in membrane fractions of hCHT transfected COS-7 cells is saturable and has high-affinity. Binding obtained in membrane fractions from pcDNA3 transfected cells were subtracted to define CHT-mediated [^{3}H] HC-3 binding. Inset: Scatchard transformation of CHT-mediated [^{3}H] HC-3 binding. (B) Unlabeled HC-3, choline and Ach dose-dependently inhibit [^{3}H] HC-3 binding in membrane fractions of COS-7 cells. Inhibition assays were performed using 10 nM [^{3}H] HC-3. ACh was examined in the presence of 10 μM physostigmine to inhibit cholinesterase activity. (C) Uptake of [^{3}H]choline in resealed membrane vesicles derived from transfected COS-7 cells is saturable and has high-affinity for choline. In all assays, [^{3}H] choline uptake determined in the presence of 1 μM HC-3 is defined as nonspecific uptake. Inset: Eadie-Hofstee-Scatchard transformation of CHT-mediated [^{3}H] choline uptake. (D) Unlabeled HC-3, choline and ACh dose-dependently inhibit [^{3}H] HC-3 binding in membrane fractions of COS-7 cells. In A–D, the results are presented as mean ± SEM of triplicate experiments.

(Fig. 2A) and Scatchard analyses of [^{3}H]HC-3 binding indicate single site kinetics (Hill coefficient n = 0.99) with an equilibrium dissociation constant (K_d) of 4 nM. Replacement of either Na^+ or Cl^- with lithium or isethionate, respectively, reduced [^{3}H]HC-3 binding to levels seen in vector-transfected cells (data not shown). The low level of nonspecific [^{3}H]HC-3 binding detected in vector transfected cells is also insensitive to the removal of either Na^+ or Cl^-. Unlabeled HC-3, and choline dose-dependently inhibit [^{3}H] HC-3 binding in hCHT transfected COS-7 cell membranes with Hill coefficients not significantly different from 1 (Fig. 2B). The K_i values for HC-3, choline, and ACh in inhibiting [3H]HC-3 binding were 4 nM, 21 μM and 433 μM, respectively.

Transport assays. Initial transport studies in cRNA-injected *Xenopus laevis* oocytes and intact, transfected COS-7 cells demonstrated a modest increase in [^{3}H]choline uptake, with activity too low to permit extensive kinetic or pharmacologic studies. We hypothesized that intracellular retention of CHTs in a cytoplasmic pool might be limiting choline transporter activity measurements with intact cells. Therefore, we determined CHT-mediated [^{3}H]choline transport using resealed membrane vesicles prepared from total cell membranes. In contrast to intact cell studies, we readily detected hCHT-mediated choline transport activity in resealed membrane vesicles prepared from hCHT transfected COS-7 cells but not in vesicles prepared from vector transfected controls and addition of HC-3 reduced [^{3}H]choline uptake to levels seen in vector transfected COS-7 membrane vesicles (data not shown). The specific uptake of [^{3}H]choline is saturable and displays single-site kinetics (Hill coefficient n = 0.99) with a K_m of 1.6 μM (Fig. 2C). Replacement of either Na^+ with Li^+ or Cl^- with isethionate reduced [^{3}H]choline uptake to levels seen in vector-transfected cells (data not shown). Unlabeled HC-3, choline and ACh inhibited [3H]choline uptake in a dose-dependent fashion (Fig. 2D), yielding K_i values of 5 nM, 123 nM, and 570 nM, respectively.

In summary, structural, distribution, and functional data provided in this report suggest that hCHT encodes a protein responsible for human HACU. hCHT-directed antibodies (44) and gene probes should be useful in assessing molecular mechanisms that support choline transporter regulation and the role of hCHT in disease states.

ACKNOWLEDGMENTS

We thank Scott Ramsey for his help in *Xenopus laevis* oocyte experiments. This work was supported by T32 HL07323 research fellowship to S.A., predoctoral support by the Vanderbilt University Center for Molecular Neuroscience to S.M.F, and Awards RO1 NS32387 to A.L.G. and RO1 MH58921 to R.D.B.

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Na(+)-dependent, high-affinity choline uptake in cholinergic neurons is the rat limiting step in acetylcholine synthesis. Here we report the molecular cloning a functional characterization of the human high-affinity choline transporter (hCHT1). The hCHT1 exhibits significant homology with known members of Na(+)-dependent glucose transporter family, but not with members of the neurotransmitter transporter family. The human CHT1 gene is 25 kb in length 9 exons and was assigned to chromosome II at position IIq11-12. Northern blo analysis showed that a 5.4 kb hCHT1 transcript was expressed exclusively in tissues containing cholinergic neurons. When expressed in Xenopus oocytes, t human clone induced Na(+)- and Cl(-)-dependent, high-affinity choline uptake which was sensitive to the specific inhibitor hemicholinium-3, with a K(i) of 1 nM. The hCHT1-mediated choline uptake increased with increasing concentra of choline, Na(+) and Cl(-), with EC(50) values of 2.0 microM, 76 mM, and 4 mM, and with apparent Hill coefficients of 1, 2.5 and 2.3, respectively.

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FEBS Letters 484 (2000) 92–97 FEBS 24239

Functional characterization of the human high-affinity choline transporter[1]

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Received 4 September 2000; revised 6 October 2000; accepted 9 October 2000

First published online 17 October 2000

Edited by Guido Tettamanti

Abstract **Na^+-dependent, high-affinity choline uptake in cholinergic neurons is the rate-limiting step in acetylcholine synthesis. Here we report the molecular cloning and functional characterization of the human high-affinity choline transporter (hCHT1). The hCHT1 exhibits significant homology with known members of the Na^+-dependent glucose transporter family, but not with members of the neurotransmitter transporter family. The human CHT1 gene is 25 kb in length with 9 exons and was assigned to chromosome II at position IIq11–12. Northern blot analysis showed that a 5.4 kb hCHT1 transcript was expressed exclusively in tissues containing cholinergic neurons. When expressed in *Xenopus* oocytes, the human clone induced Na^+- and Cl^--dependent, high-affinity choline uptake, which was sensitive to the specific inhibitor hemicholinium-3, with a K_i of 1.3 nM. The hCHT1-mediated choline uptake increased with increasing concentrations of choline, Na^+ and Cl^-, with EC_{50} values of 2.0 μM, 76 mM, and 48 mM, and with apparent Hill coefficients of 1, 2.5 and 2.3, respectively.** **© 2000 Federation of European Biochemical Societies. Published by Elsevier Science B.V. All rights reserved.**

Key words: High-affinity choline transporter; Acetylcholine

1. Introduction

Choline is the precursor of membrane lipids such as phosphatidylcholine and sphingomyelin, signaling lipids like platelet-activating factor and sphingosylphosphorylcholine, and the neurotransmitter acetylcholine. Choline is an essential nutrient and plays a critical role in the development and function of the brain [1–3]. Choline does not permeate cell membranes and therefore requires a carrier-mediated transport system to cross the plasma membrane.

The high-affinity choline transport system has been characterized in brain synaptosomes [4–9], and is thought to be unique to cholinergic neurons [9,10]. In cholinergic neurons, choline used in the acetylcholine synthesis is taken up by a high-affinity choline transporter (CHT) localized in the presynaptic terminals. This high-affinity choline uptake is Na^+-dependent, sensitive to hemicholinium-3 (HC3) and is thought to be the rate-limiting step in acetylcholine synthesis [4–9]. Studies using brain proteoliposomes have demonstrated that the membrane potential and Na^+ gradient provide the driving force for high-affinity choline uptake [8,11–13].

The CHT was not identified in molecular terms for a long time, in spite of the fact that cDNAs for most of the neurotransmitter transporters had been identified by homology or expression cloning. Very recently, we succeeded in isolating a cDNA encoding the CHT1 of the nematode *Caenorhabditis elegans* using information provided by the *C. elegans* Genome Project and used this cDNA to isolate the rat homolog [14]. The amino acid sequence of CHT1 tuned out to have significant homology with known members of the Na^+-dependent glucose transporter family [15], but no significant homology with neurotransmitter transporters [16]. The characteristics of CHT1-mediated choline uptake were essentially the same as those of the high-affinity choline uptake in rat brain synaptosomes, showing a high affinity for choline, Na^+- and Cl^--dependency, and high sensitivity to HC3.

Cholinergic neurons are known to be selectively degenerated in Alzheimer's disease, resulting in the loss of high-affinity choline uptake activity overall [17]. High-affinity choline uptake activity and HC3-binding activity, however, are reported to increase in spared nerve terminals in Alzheimer's disease patients [18,19]. It will be interesting to examine whether human CHT (hCHT) is overexpressed under these circumstances. However, no molecular information on the human transporter precludes the detailed examination of its regulation in cholinergic neurons.

In this study, we report the molecular cloning and functional characterization of a cDNA encoding the hCHT1. We have analyzed the hCHT1-mediated choline uptake to determine whether the hCHT1 shows choline uptake activity with the same characteristics as that found in cholinergic nerve terminals in human.

2. Materials and methods

2.1. Cloning of hCHT1 cDNA

Gene-specific primers were designed based on an entry (GenBank accession number AQ316435) that is homologous to *C. elegans* CHT1 (CHO-1) in the human genomic survey sequence (GSS). For primary 5′ and 3′ rapid amplification of cDNA ends (RACE), a gene-specific primer was paired with adapter primer to amplify human brain Marathon Ready® cDNA (Clontech). This polymerase chain reaction product was used for secondary RACE reactions using a nested gene-specific primer. All RACE products were subcloned into pT7Blue T-Vector (Novagen) and sequenced. A human spinal cord

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[1] The sequence data reported in this paper will appear in the DDBJ/EMBL/GenBank nucleotide sequence databases with the accession number AB043997.

Abbreviations: CHT1, high-affinity choline transporter 1; CHO-1, high-affinity choline transporter 1 in *Caenorhabditis elegans*; HC3, hemicholinium-3; GSS, genomic survey sequence

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PII: S0014-5793(00)02134-7

A

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hCHT1  MAFHVEGLIAIIVFYLLILLVGIWAAWRTKNS----GSAEERSEAIIVGG   46
rCHT1  MPFHVEGLVAIILFYLLIFLVGIWAAWKTKNS----GNAEERSEAIIVGG   46
CHO-1  -MADLLGIVAIVFFYVLILVVGIWAGRKSKSSKELESEAGAATEEVMLAG   49
                    I
hCHT1  RDIGLLVGGFTMTATWVGGGYINGTAEAVYVPGYGLAWAQAPIGYSLSLI   96
rCHT1  RDIGLLVGGFTMTATWVGGGYINGTAEAVYGPGCGLAWAQAPIGYSLSLI   96
CHO-1  RNIGTLVGIFTMTATWVGGAYINGTAEALYNG--GLLGCQAPVGYAISLV   97
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rCHT1  LGGLFFAKPMRSKGYVTMLDPFQQIYGKRMGGLLFIPALMGEMFWAAAIF  146
CHO-1  MGGLLFAKKMREEGYITMLDPFQHKYGQRIGGLMYVPALLGETFWTAAIL  147
       III                                  IV
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rCHT1  SALGATISVIIDVDVNISVIVSALIAILYTLVGGLYSVAYTDVVQLFCIF  196
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CHO-1  LLVFGGIPWQVYFQRVLSSKTAHGAQTLSFVAGVGCILMAIPPALIGAIA  291
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rCHT1  ASTDWNQTAYGFPDPKTKEEAD------MILPIVLQYLCPVYISFFGLGA  339
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rCHT1  VSAAVMSSADSSILSASSMFARNIYQLSFRQNASDKEIVWVMRITVFVFG  389
CHO-1  VSAAVMSSADSSVLSAASMFAHNIWKLTIRPHASEKEVIIVMRIAIICVG  391
                                                IX
hCHT1  ASATAMALLTKTVYGLWYLSSDLVYIVIFPQLLCVLFVKGTNTYGAVAGY  439
rCHT1  ASATAMALLTKTVYGLWYLSSDLVYIIIFPQLLCVLFIKGTNTYGAVAGY  439
CHO-1  IMATIMALTIQSIYGLWYLCADLVYVILFPQLLCVVYMPRSNTYGSLAGY  441
                                X
hCHT1  VSGLFLRITGGEPYLYLQPLIFYPGYYPDDNGIYNQKFPFKTLAMVTSFL  489
rCHT1  IFGLFLRITGGEPYLYLQPLIFYPGYYPDKNGIYNQRFPFKTLSMVTSFF  489
CHO-1  AVGLVLRLIGGEPLVSLPAFFHYPMYT--DG---VQYFPFRTTAMLSSMA  486
          XI
hCHT1  TNICISYLAKYLFESGTLPPKLDVFDAVVAR---HSEENMDKTILVKNEN  536
rCHT1  TNICVSYLAKYLFESGTLPPKLDIFDAVVSR---HSEENMDKTILVRNEN  536
CHO-1  TIYIVSIQSEKLFKSGRLSPEWDVMGCVVNIPIDHVPLPSDVSFAVSSE-  535
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rCHT1  IKLNELAPVKPRQSLTLSSTFTNKEALLDVDSSPEGSGTEDNLQ        580
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B

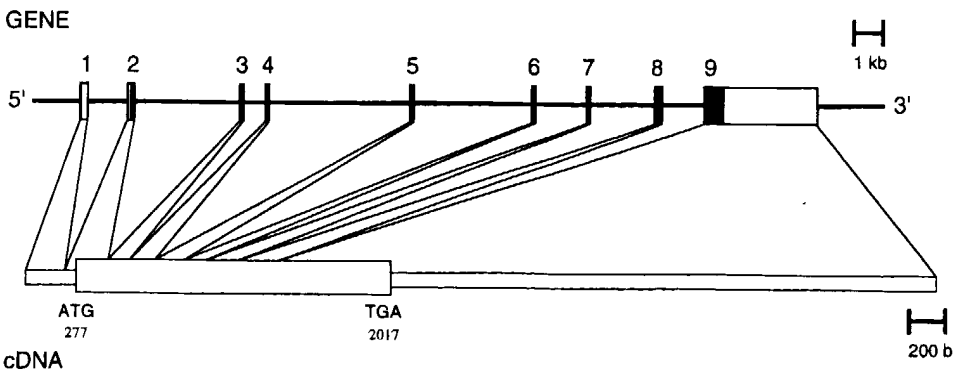


Fig. 1. Primary structure and genomic organization of hCHT1. A: Alignment of the predicted amino acid sequence of hCHT1 with rat CHT1 and *C. elegans* CHO-1. Numbers in the right column correspond to amino acid residues. Identical residues are in bold. The putative transmembrane domains I–XII are underlined. B: Structural organization of the hCHT1 gene and its organizational relationship to the hCHT1 cDNA. Alignment of the cDNA sequence with the genomic sequences (GenBank accession numbers AC009963 and AC023672) predicts nine exons. Black boxes in the gene represent the coding regions, and open boxes represent untranslated regions. The numbers in cDNA correspond to the position of the first nucleotide of each codon.

cDNA library was constructed using Superscript® Plasmid System (Gibco BRL, Life Technologies). The hCHT1 cDNA was isolated from the cDNA library using the GeneTrapper cDNA Positive Selection System (Gibco BRL, Life Technologies), in which single strand cDNA clones hybridized with a biotinylated oligonucleotide probe are captured on streptavidin-coated paramagnetic beads, repaired and amplified. After characterization of the resulting cDNA clones, one positive clone was subcloned into the *Nco*I (filled-in) and *Not*I sites of modified pSPUTK (Stratagene).

2.2. Northern blotting analysis

Human multiple tissue Northern blots (Clontech) were used for Northern analysis. The *Sph*I–*Stu*I fragment of hCHT1 cDNA corresponding to 936–1958 bp was labeled with ^{32}P using *redi*prime® II (Amersham Pharmacia Biotech). Filters were hybridized with the cDNA probe as described [14] and exposed to autoradiography film with an enhancing screen for 4 days at −80°C.

2.3. Expression in Xenopus oocytes

Xenopus laevis oocyte expression studies and uptake measurements were performed using [^{3}H]choline chloride (83 Ci/mmol) (Amersham Pharmacia Biotech) as described previously [14]. The hCHT1 cRNA (25 ng) was injected into manually defolliculated *Xenopus* oocytes. Two days after injection, choline uptake assays were performed by incubating 6–8 oocytes with [^{3}H]choline chloride in 0.75–1.0 ml of standard uptake buffer [14]. Because choline uptake mediated by hCHT1 was linearly dependent on the incubation time up to 60 min at the choline concentrations of 10 μM, uptake experiments were performed for 20 min in most cases. Uptake was terminated by washing oocytes with 3 ml of ice-cold uptake buffer five times. Non-specific choline uptake was determined from uptake in the presence of 1 μM HC3 (Sigma) or from uptake in water-injected oocytes. Each data for a single oocyte was represented by the mean ± S.E.M. (n = 6–8).

2.4. Ligand binding

A binding assay of [^{3}H]HC3 was carried out using intact *Xenopus* oocytes (HC3, 128 Ci/mmol, NEN Life Science Products). Two days after injection of cRNA, the [^{3}H]HC3 binding assay was performed using 3–5 oocytes in a final volume of 500 μl of standard uptake buffer containing indicated concentrations of [^{3}H]HC3. Binding was terminated after 1 h at room temperature by washing oocytes with 3 ml of ice-cold standard uptake buffer three times. Specific binding was calculated by subtracting non-specific binding, which was determined from the binding in the presence of 1 μM HC3, from total binding. Each data for a single oocyte was represented by the mean ± S.E.M. (n = 3–5). The turnover number for hCHT1 was calculated by dividing the V_{max} of hCHT1-mediated choline uptake by the B_{max} of HC3 binding sites.

3. Results and discussion

3.1. Cloning of hCHT1 cDNA

Recently, we isolated a cDNA encoding the CHT1 from the nematode *C. elegans* (CHO-1) [14]. A database search using the predicted amino acid sequence of *C. elegans* CHO-1 identified an entry (GenBank accession number AQ316435) in the human GSS. The nucleotide sequence of this GSS entry was used to isolate the corresponding cDNA from the human spinal cord. We constructed and screened a human spinal cord cDNA library and isolated positive clones, one of which was chosen for further characterization. This cDNA clone was designated hCHT1.

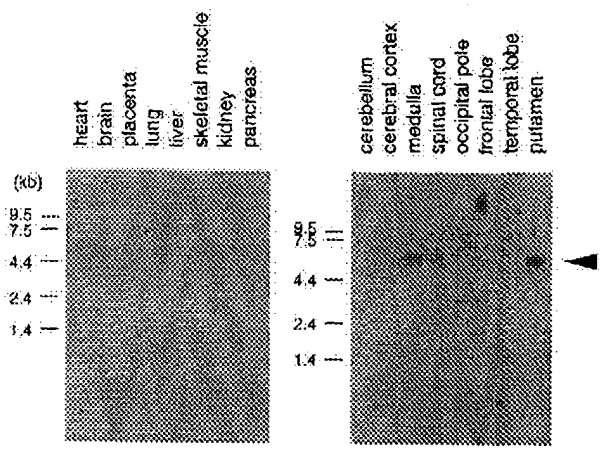


Fig. 2. Tissue distribution of hCHT1. Northern analysis of CHT1 mRNA transcripts in human tissues probed with ^{32}P-labeled CHT1 cDNA. The hybridization washes were done under high stringency conditions. The sizes of the molecular weight standards are indicated on the left. The arrowhead indicates positive signals.

The hCHT1 cDNA is 5144 bp long with an open reading frame of 1743 bp (including the termination codon), encoding a protein of 580 amino acids with a predicted molecular weight of 63 kDa, containing 12 putative transmembrane domains. The hCHT1 is 93% homologous to the rat CHT1 and 53% homologous to the *C. elegans* CHO-1 (Fig. 1A). The amino acid sequence of hCHT1 has significant homology (20–26%) with known members of the Na^+-dependent glucose transporter family [15], but not with neurotransmitter transporters [16].

A query of GenBank databases revealed human genomic sequences (GenBank accession numbers AC009963 and AC023672) that were identical to the hCHT1. Alignment of these sequences with the cloned cDNA predicts the hCHT1

Table 1
Ionic dependence of hCHT1-mediated choline uptake

Inorganic salts	hCHT1-mediated choline uptake (fmol/oocyte/30 min)	Percent control (fmol/oocyte/30 min)
NaCl	5.6 ± 0.2	100 ± 4.4
LiCl	< 0.1	< 1
KCl	< 0.1	< 1
RbCl	< 0.1	< 1
N-Methyl-D-glucamine Cl	< 0.1	< 1
NaBr	3.9 ± 0.1	69.3 ± 2.6
NaF	0.8 ± 0.1	14.3 ± 1.4
NaI	0.8 ± 0.1	14.4 ± 2.2
Na gluconate	0.4 ± 0.1	7.4 ± 1.6

Xenopus oocytes injected with either hCHT1 cRNA or water were incubated with 10 mM [^{3}H]choline for 30 min at room temperature either in standard buffer (100 mM NaCl, 2 mM KCl, 1 mM $MgCl_2$, 1 mM $CaCl_2$, 10 mM HEPES, 5 mM Tris, pH 7.4) or in buffers where NaCl was replaced with various inorganic salts. After incubation, the oocytes were washed with the respective buffer (ice cold), and the radioactivity associated with the oocytes was determined. Uptake measured in water-injected oocytes was subtracted to obtain hCHT1-mediated uptake. Values are means ± S.E.M.

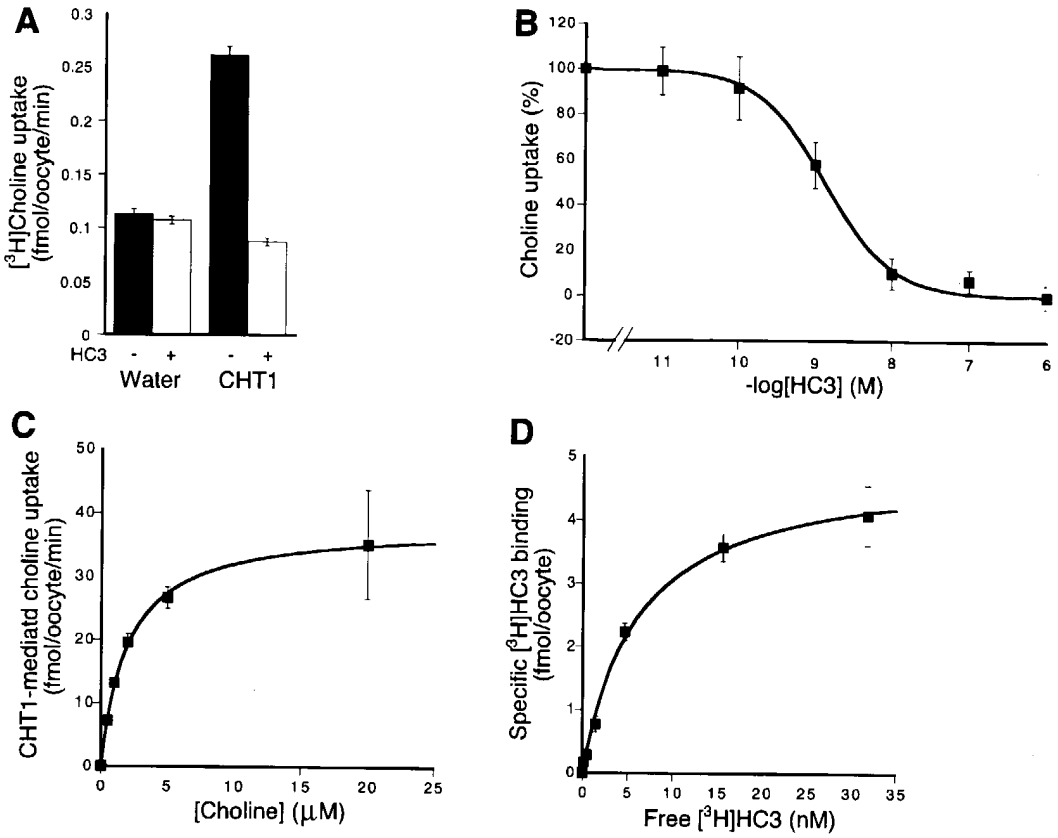


Fig. 3. Functional expression of hCHT1 in *Xenopus* oocytes. A: [^{3}H]Choline uptake into *Xenopus* oocytes injected with hCHT1 cRNA or water. Filled and open bars indicate choline uptake measured in the absence or presence of 1 μM HC3, respectively. Each bar represents the mean ± S.E.M. (n = 6–8 oocytes). Two days after injection of capped cRNA, choline uptake was measured by incubating 6–8 oocytes with [^{3}H]choline chloride for 20 min in 0.75 ml of standard uptake buffer (100 mM NaCl, 2 mM KCl, 1 mM $MgCl_2$, 1 mM $CaCl_2$, 10 mM HEPES, 5 mM Tris, pH 7.4). B: Inhibition by HC3 of choline uptake. Choline uptake was measured in the presence of the indicated concentrations of HC3. C: Effect of choline concentration on CHT1-mediated choline uptake. Choline uptake in the presence of 1 μM HC3 was subtracted from that in the absence of 1 μM HC3, yielding hCHT1-mediated choline uptake. The uptake was fitted to a Michaelis–Menten curve. D: Saturation analysis of specific [^{3}H]HC3 binding in intact oocytes. Specific binding was calculated by subtracting non-specific binding, which was determined from the binding in the presence of 1 μM HC3, from total binding.

gene structure. The hCHT1 gene is 25 kb in length and contains nine exons (Fig. 1B). The genomic sequences were assigned to chromosome II at position IIq11–12.

3.2. Tissue distribution of hCHT1 expression

Tissue distribution of hCHT1 mRNA was studied using commercially available membrane blots containing size fractionated poly(A)$^+$ RNA from human tissues. Northern blot analysis for hCHT1 mRNA showed the expression of a 5.4 kb transcript (Fig. 2). Expression of hCHT1 mRNA was detected in putamen, medulla and spinal cord. These regions are known to contain cholinergic neurons. On the other hand, no transcripts were detected in other areas of the brain or non-neuronal tissues examined. This tissue distribution of hCHT1 mRNA is virtually the same as that of rat CHT1 mRNA [14], indicating that hCHT1 mRNA is expressed exclusively in cholinergic neurons.

3.3. Functional characterization of hCHT1

Choline uptake mediated by hCHT1 was characterized by expressing it in *Xenopus* oocytes. The choline uptake in oocytes injected with hCHT1 cRNA was 2–4-fold greater than the background uptake in oocytes injected with water (Fig. 3A). The hCHT1-mediated choline uptake was inhibited by HC3 [22] with a K_i of 1.3 nM (Fig. 3B), which is similar to the value for rat CHT1 (K_i; 2–5 nM). These values are 10-fold lower than those in rat brain synaptosomes (5–100 nM) [6–8,20]. The ionic dependence of the hCHT1-mediated uptake was examined by measuring choline uptake in hCHT1 cRNA- and water-injected oocytes in the presence of various inorganic salts (Table 1). Control uptake was measured in the presence of 100 mM NaCl. The replacement of Na^+ with other cations such as Li^+, K^+ or Rb^+ almost completely abolished the hCHT1-mediated choline uptake, indicating that Na^+ is obligatory for the uptake function. Replacing Cl^- with other anions also reduced the CHT1-mediated uptake, although Br^- could partially substitute for Cl^- as the counter anion for Na^+ as previously observed for rat brain synaptosomes [21,22]. Thus, CHT1-mediated choline uptake is both Na^+- and Cl^--dependent. The CHT1-mediated choline uptake saturated with increasing concentrations of choline with a K_m of 2.0 μM, and V_{max} of 15–40 fmol/oocyte/min (Fig. 3C). The determined K_m value was similar to that for rat CHT1 (2.2 μM) and for rat brain synaptosomes (0.5–5 μM) [5–8]. We examined [^{3}H]HC3 binding in intact oocytes, using the same batch as one used for choline uptake. Specific

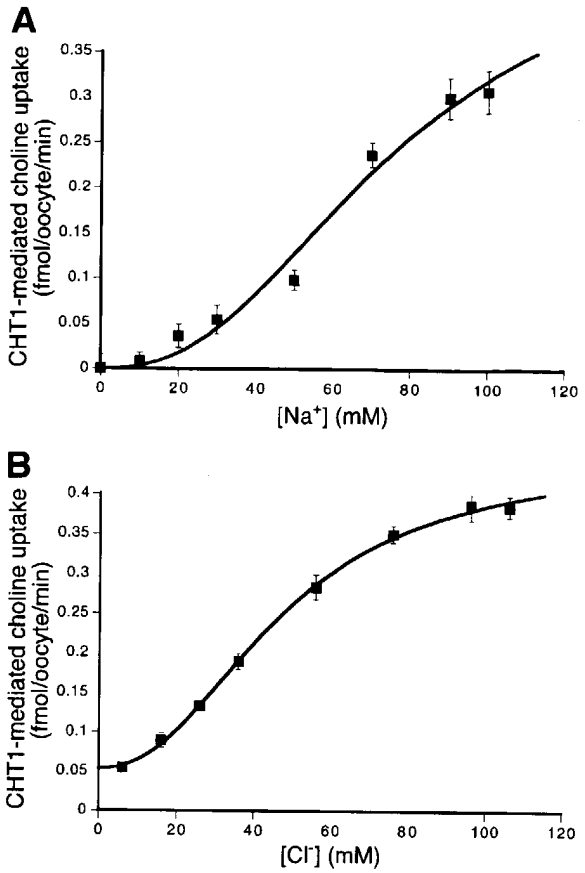


Fig. 4. Kinetic analysis of choline uptake mediated by hCHT1 in *Xenopus* oocytes. A: Effect of $[Na^+]$ on CHT1-mediated choline uptake. The $[Na^+]$ was varied between 0 and 100 mM, by replacing NaCl with LiCl. The data were fitted to the Hill equation. The choline uptake in oocytes injected with water was subtracted from that in oocytes injected with cRNA, yielding hCHT1-mediated choline uptake. B: Effect of $[Cl^-]$ on CHT1-mediated choline uptake. The $[Cl^-]$ was varied between 6 and 106 mM, by replacing NaCl with NaI. The data was fitted to the Hill equation. The choline uptake in oocytes injected with water was subtracted from that in oocytes injected with cRNA, yielding hCHT1-mediated choline uptake.

$[^3H]$HC3 binding was detected in oocytes injected with hCHT1 cRNA, but not in oocytes injected with water. The equilibrium dissociation constant (K_d) was estimated to be 6 nM and B_{max} was 1–5 fmol/oocyte (Fig. 3D). The calculated K_d value was similar to those obtained by the binding in human brain synaptosomes (5–10 nM) [23,24]. Assuming that one specific HC3 binding site corresponds to one functional CHT, we estimated the apparent turnover number for hCHT1 to be 0.1–0.2 choline molecule/s at room temperature. This value is lower than the one (3/s at 20°C) reported for synaptosomal membranes from *Torpedo* electric organ [25]. This difference may indicate that the hCHT1-mediated choline uptake in *Xenopus* oocytes does not completely duplicate the high-affinity choline uptake of brain synaptosomes.

As hCHT1-mediated choline uptake is both Na^+- and Cl^--dependent, the effects of Na^+ and Cl^- on the kinetics of hCHT1-mediated choline uptake were examined by measuring choline uptake in oocytes injected with hCHT1 cRNA in the presence of varying concentrations of extracellular Na^+ or Cl^-. The resulting choline uptake showed a sigmoidal dependence on Na^+ and Cl^- concentration. The dose–response curve fitted to the Hill equation with a Hill coefficient of 2.5, an EC_{50} of 76 mM, and a V_{max} of 0.48 fmol/oocyte/min (Fig. 4A). The Cl^- data yielded a Hill coefficient of 2.3, an EC_{50} of 48 mM, and a V_{max} of 0.39 fmol/oocyte/min (Fig. 4B). The apparent EC_{50} value for Na^+ of hCHT1 was similar to the values reported for rat brain synaptosomes (40–80 mM) [6,21]. A Hill coefficient of 2.5 for Na^+ and 2.3 for Cl^- suggest that the transport cycle involves the binding of 2–3 Na^+ ions and 2–3 Cl^- ions. As choline is a monovalent cation, our results suggest that the hCHT1-mediated choline uptake is electrogenic, and both the Na^+ gradient and the inside-negative membrane potential contribute to the driving force for the hCHT1-mediated choline uptake.

All the present results indicate that the characteristics of hCHT1-mediated choline uptake in *Xenopus* oocytes are essentially the same as those of the high-affinity choline uptake in human brain synaptosomes. This indicates that hCHT1 is sufficient to exhibit the high-affinity choline uptake activity in cholinergic nerve terminals. The expression level of hCHT1 in *Xenopus* oocytes, as assessed by the $[^3H]$HC3 binding activity, was 1–5 fmol/oocyte, which is comparable to those of membrane proteins in *Xenopus* oocytes in usual case (1 fmol/oocyte) [26], indicating that the low uptake activity of oocytes injected with hCHT1 cRNA is not due to the low expression level of hCHT1 but due to the low activity of expressed hCHT1. Actually the turnover rate of hCHT1, 0.1–0.2/s, was much lower than that of sodium/glucose cotransporter 1, 57/s [27]. The rate of 0.1–0.2/s was also low compared with the value of 3/s for synaptosomes derived from *Torpedo* electric organ [25]. It is interesting to know if there are other factor(s) which facilitate the uptake activity without changing the uptake characteristics or if CHT1 has an intrinsic low uptake activity.

In summary, we have cloned the hCHT1 that is responsible for high-affinity choline uptake in cholinergic neurons. We also described the kinetic analysis of hCHT1-mediated choline uptake in *Xenopus* oocytes.

Acknowledgements: We thank Ms. M. Suzuki and Ms. C. Kaitsuka for technical assistance. This work was supported by grants from Japan Science and Technology Corporation (CREST), and the Ministry of Japan Society for the Promotion of Science (Research for Future Program).

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Cloning and characterization of two human polyspecific organic cation transporters.

Gorboulev V, Ulzheimer JC, Akhoundova A, Ulzheimer-Teuber I, Karbac U, Quester S, Baumann C, Lang F, Busch AE, Koepsell H.

Anatomisches Institut der Bayerischen Julius-Maximilians-Universitat, Wurzb Germany.

Previously we cloned a polyspecific transporter from rat (rOCT1) that is expre in renal proximal tubules and hepatocytes and mediates electrogenic uptake of organic cations with different molecular structures. Recently a homologous transporter from rat kidney (rOCT2) was cloned but not characterized in detail report cloning and characterization of two homologous transporters from man (hOCT1 and hOCT2) displaying approximately 80% amino acid identity to rO and rOCT2, respectively. Northern blots showed that hOCT1 is mainly transcr in liver, while hOCT2 is found in kidney. Using in situ hybridization and immunohistochemistry, expression of hOCT2 was mainly detected in the dista tubule where the transporter is localized at the luminal membrane. After expression in Xenopus laevis oocytes, hOCT1 and hOCT2 mediate tracer influ N-1-methylnicotinamide (NMN), tetraethylammonium (TEA), and 1-methyl-4 phenylpyridinium (MPP). For cation transport by hOCT2 apparent K(m) and I values were determined in tracer flux measurements. In addition, electrical measurements were performed with voltage-clamped oocytes. Similar to rOCT cation transport by hOCT2 was pH independent, electrogenic, and polyspecific however, the cation specificity was different. In voltage-clamped hOCT2-expressing oocytes, inward currents were induced by superfusion with MPP, T choline, quinine, d-tubocurarine, pancuronium, and cyanine863. Cation transp in distal tubules is indicated for the first time. Here hOCT2 mediates the first s in cation reabsorption. hOCT1 may participate in hepatic excretion of organic cations.

PMID: 9260930 [PubMed - indexed for MEDLINE]

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Selectivity of hemicholinium mustard, an affinity ligand, for the high-affinity choline transport system.

Gylys KH, Abdalah I, Jenden DJ.

Department of Pharmacology and Brain Research Institute, UCLA School of Medicine, Los Angeles, CA 90024, USA.

The selectivity of the irreversible inhibition of high-affinity choline uptake (HACU) by hemicholinium mustard (HCM; 2,2'-(4,4'-biphenylene)bis[2-hydr 4-(2-bromoethyl)-morpholine] hydrochloride) with respect to other cholinergi proteins and other sodium-dependent transport systems was examined. Preincubation of rat forebrain membranes with HCM, followed by washing an measurement of [3H]-hemicholinium-3 binding to the high-affinity choline transporter, was shown to decrease binding capacity (Bmax) by 70% without affecting the apparent affinity of the ligand. However, a similar preincubation, wash and binding experiment using [3H]-NMS as a ligand for muscarinic receptors showed no HCM effect on binding parameters. To measure the effec HCM on choline acetyltransferase (ChAT), synaptosomes were incubated in HCM, then washed. The synaptosomes were lysed and ChAT activity was measured. Treatment with 50 microM HCM, a concentration that inhibits 100% synaptosomal HACU, results in a 24% decrease in ChAT activity. HCM demonstrates little residual inhibition of other sodium-dependent neurotransmi transporter transporters: preincubation with 50 microM HCM results in a decr of 12% in transport of [3H]-dopamine and a decrease of 6% in the transport of [3H]-GABA. The binding of HCM, like that of hemicholinium-3 is sodium-dependent. HCM preincubation in the presence of sodium results in inhibition HACU to 32% of control; in the absence of sodium HACU is 65% of control. represents a loss of 51% of the observed irreversible inhibition produced by H Irreversible inhibition by HCM can also be prevented by co-incubation with hemicholinium-3. Co-incubation with hemicholinium-3 results in residual HA inhibition that decreases from 51% (HCM alone) to 28% (HCM + hemicholini 3). When atropine instead of hemicholinium-3 is co-incubated with HCM, HC still inhibits 40% of transport, demonstrating the pharmacological specificity c protective effect of hemicholinium-3. Experiments in the guinea-pig myenteri plexus preparation demonstrate a gradual recovery from the residual effects of HCM. Evoked ACh release decreases to 24% immediately following treatmen with 1 microM HCM. After 2 hr of recovery, tissues have recovered to about 5 of control levels, after which recovery continues at a slower rate.

PMID: 9517446 [PubMed - indexed for MEDLINE]

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The two human organic cation transporter genes SLC22A1 and SLC22A2 are located on chromosome 6q26.

Koehler MR, Wissinger B, Gorboulev V, Koepsell H, Schmid M.

Department of Human Genetics, University of Wurzburg, Biozentrum, Germa:

Polyspecific transporters for organic cations (OCT) belong to a new protein fa: which also include organic anion transporters. The first human transporters fro this family (OCT1, OCT2) have been recently cloned. They translocate small cations like tetraethylammonium, choline and monoamine neurotransmitters a: are involved in hepatic and renal cation excretion, respectively. We have locali the OCT1 and OCT2 genes (SLC22A1, SLC22A2) on chromosome 6q26.

PMID: 9605850 [PubMed - indexed for MEDLINE]

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1: J Biol Chem. 1998 Aug 7;273(32):20378-82. Related Articles,

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Molecular and functional identification of sodium ion-dependent, high affinity human carnitine transporter OCTN2.

Tamai I, Ohashi R, Nezu J, Yabuuchi H, Oku A, Shimane M, Sai Y, Tsuji

Faculty of Pharmaceutical Sciences, Kanazawa University, 13-1 Takara-machi Kanazawa 920-0934, Japan.

Primary carnitine deficiency, because of a defect of the tissue plasma membra carnitine transporters, causes critical symptoms. However, the transporter has been molecularly identified. In this study, we screened a human kidney cDNA library and assembled a cDNA-encoding OCTN2 as a homologue of the organ cation transporter OCTN1, and then we examined the function of OCTN2 as a carnitine transporter. OCTN2-cDNA encodes a polypeptide of 557 amino acid with 75.8% similarity to OCTN1. Northern blot analysis showed that OCTN2 strongly expressed in kidney, skeletal muscle, heart, and placenta in adult hum When OCTN2 was expressed in HEK293 cells, uptake of L-[3H]carnitine was strongly enhanced in a sodium-dependent manner with Km value of 4.34 micr whereas typical substrates for previously known organic cation transporters, tetraethylammonium and guanidine, were not good substitutes. OCTN2-media L-[3H]carnitine transport was inhibited by the D-isomer, acetyl-D,L-carnitine, gamma-butyrobetaine with high affinity and by glycinebetaine with lower affi whereas choline, beta-hydroxybutyric acid, gamma-aminobutyric acid, lysine, taurine were not inhibitory. Because the observed tissue distribution of OCTN consistent with the reported distribution of carnitine transport activity and the functional characteristics of OCTN2 coincide with those reported for plasma membrane carnitine transport, we conclude that OCTN2 is a physiologically important, high affinity sodium-carnitine cotransporter in humans.

PMID: 9685390 [PubMed - indexed for MEDLINE]

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1: Mol Pharmacol. 1998 Aug;54(2):342-52. Related Articles,

Human neurons express the polyspecific cation transporter hOC1 which translocates monoamine neurotransmitters, amantadine, a memantine.

Busch AE, Karbach U, Miska D, Gorboulev V, Akhoundova A, Volk C, A P, Ulzheimer JC, Sonders MS, Baumann C, Waldegger S, Lang F, Koepse H.

Institut fur Physiologie, 72076 Tubingen, Germany. anat010@uni-wuerzburg.

Recently, we cloned the human cation transporter hOCT2, a member of a new family of polyspecific transporters from kidney, and demonstrated electrogeni uptake of tetraethylammonium, choline, N1-methylnicotinamide, and 1-methy phenylpyridinium. Using polymerase chain reaction amplification, cDNA sequencing, in situ hybridization, and immunohistochemistry, we now show th hOCT2 message and protein are expressed in neurons of the cerebral cortex an various subcortical nuclei. In Xenopus laevis oocytes expressing hOCT2, electrogenic transport of norepinephrine, histamine, dopamine, serotonin, and antiparkinsonian drugs memantine and amantadine was demonstrated by trace influx, tracer efflux, electrical measurements, or a combination. Apparent Km values of 1.9 +/- 0.6 mM (norepinephrine), 1.3 +/- 0.3 mM (histamine), 0.39 + 0.16 mM (dopamine), 80 +/- 20 microM (serotonin), 34 +/- 5 microM (memantine), and 27 +/- 3 microM (amantadine) were estimated. Measuremen trans-effects in depolarized oocytes and human embryonic kidney cells expres hOCT2 suggests that there were different rates and specificities for cation influ and efflux. The hypothesis is raised that hOCT2 plays a physiological role in t central nervous system by regulating interstitial concentrations of monoamine neurotransmitters that have evaded high affinity uptake mechanisms. We show amantadine does not interact with the expressed human Na+/Cl- dopamine cotransporter. However, concentrations of amantadine that are effective for the treatment of Parkinson's disease may increase the interstitial concentrations of dopamine and other aminergic neurotransmitters by competitive inhibition of hOCT2.

PMID: 9687576 [PubMed - indexed for MEDLINE]

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Human neurons express the polyspecific cation transporter hOC1 which translocates monoamine neurotransmitters, amantadine, a memantine.

Busch AE, Karbach U, Miska D, Gorboulev V, Akhoundova A, Volk C, A P, Ulzheimer JC, Sonders MS, Baumann C, Waldegger S, Lang F, Koepse H.

Institut fur Physiologie, 72076 Tubingen, Germany. anat010@uni-wuerzburg.

Recently, we cloned the human cation transporter hOCT2, a member of a new family of polyspecific transporters from kidney, and demonstrated electrogeni uptake of tetraethylammonium, choline, N1-methylnicotinamide, and 1-methy phenylpyridinium. Using polymerase chain reaction amplification, cDNA sequencing, in situ hybridization, and immunohistochemistry, we now show th hOCT2 message and protein are expressed in neurons of the cerebral cortex an various subcortical nuclei. In Xenopus laevis oocytes expressing hOCT2, electrogenic transport of norepinephrine, histamine, dopamine, serotonin, and antiparkinsonian drugs memantine and amantadine was demonstrated by trace influx, tracer efflux, electrical measurements, or a combination. Apparent Km values of 1.9 +/- 0.6 mM (norepinephrine), 1.3 +/- 0.3 mM (histamine), 0.39 + 0.16 mM (dopamine), 80 +/- 20 microM (serotonin), 34 +/- 5 microM (memantine), and 27 +/- 3 microM (amantadine) were estimated. Measuremen trans-effects in depolarized oocytes and human embryonic kidney cells expres hOCT2 suggests that there were different rates and specificities for cation influ and efflux. The hypothesis is raised that hOCT2 plays a physiological role in t central nervous system by regulating interstitial concentrations of monoamine neurotransmitters that have evaded high affinity uptake mechanisms. We show amantadine does not interact with the expressed human Na+/Cl- dopamine cotransporter. However, concentrations of amantadine that are effective for the treatment of Parkinson's disease may increase the interstitial concentrations of dopamine and other aminergic neurotransmitters by competitive inhibition of hOCT2.

PMID: 9687576 [PubMed - indexed for MEDLINE]

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1: Biochem Biophys Res Commun. 1999 Feb 16;255(2):508-14. Related Articles,

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Molecular cloning and characterization of two novel human renal organic anion transporters (hOAT1 and hOAT3).

Race JE, Grassl SM, Williams WJ, Holtzman EJ.

Department of Medicine, State University of New York Health Science Center Syracuse 13210, USA.

The cloned organic anion transporters from rat, mouse, and winter flounder (rOAT1, mOAT1, fROAT) mediate the coupled exchange of alpha-ketoglutarate with multiple organic anions, including p-aminohippurate (PAH). We have isolated two novel gene products from human kidney which bear significant homology to the known OATs and belong to the amphiphilic solute facilitator (ASF) family. The cDNAs, hOAT1 and hOAT3, encode for 550- and 568-amino acid residue proteins, respectively. hOAT1 and hOAT3 mRNAs are expressed strongly in kidney and weakly in brain. Both genes map to chromosome 11 region q11.7. PAH uptake by Xenopus laevis oocytes injected with hOAT1 mRNA is increased 100-fold compared to water-injected oocytes. PAH uptake is chloride dependent and is not further increased by preincubation of oocytes in 5 mM glutarate. Uptake of PAH is inhibited by probenicid, alpha-ketoglutarate, bumetanide, furosemide, and losartan, but not by salicylate, urate, choline, amilioride, and hydrochlorothiazide. Copyright 1999 Academic Press.

PMID: 10049739 [PubMed - indexed for MEDLINE]

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AN   1999:341145  BIOSIS
DN   PREV199900341145
TI   Selective substrates for non-neuronal monoamine transporters.
AU   Gruendemann, Dirk [Reprint author]; Liebich, Gernot; Kiefer, Nicholas;
     Koester, Sandra; Schoemig, Edgar
CS   Department of Pharmacology, University of Heidelberg, Im Neuenheimer Feld
     366, 69120, Heidelberg, Germany
SO   Molecular Pharmacology, (July, 1999) Vol. 56, No. 1, pp. 1-10. print.
     CODEN: MOPMA3. ISSN: 0026-895X.
DT   Article
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AN   1999:68325  BIOSIS
DN   PREV199900068325
TI   Regulation of the choline transport system in superfused microcarrier
     cultures of BeWo cells.
AU   Eaton, B. M. [Reprint author]; Sooranna, S. R.
CS   Dep. Maternal Fetal Med., Div. Paediatrics Obstetrics Gynaecol., Imperial
     College Sch. Med., Chelsea and Westminster Hosp., 369 Fulham Road, London
     SW10 9NH, UK
SO   Placenta, (Nov., 1998) Vol. 19, No. 8, pp. 663-669. print.
     CODEN: PLACDF. ISSN: 0143-4004.
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AN   1998:139650  BIOSIS
DN   PREV199800139650
TI   Antimalarial activity of 77 phospholipid polar head analogs: Close
     correlation between inhibition of phospholipid metabolism and in vitro
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Plasmodium falciparum growth.
AU Ancelin, Marie L. [Reprint author]; Calas, Michele; Bompart, Jacques; Cordina, Gerard; Martin, Dominique; Bari, Mohammed Ben; Jei, Taib; Druilhe, Pierre; Vial, Henri J.
CS CNRS UMR 5539, Dep. Biologie-Sant, CP 107, UM II, Place E. Bataillon, 34095 Montpellier Cedex 5, France
SO Blood, (Feb. 15, 1998) Vol. 91, No. 4, pp. 1426-1437. print.
CODEN: BLOOAW. ISSN: 0006-4971.
DT Article
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ED Entered STN: 20 Mar 1998
Last Updated on STN: 20 Mar 1998

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DN PREV199799783615
TI Characterization of ***human*** erythrocyte choline transport in chronic renal failure.
AU Riley, S. P.; Talbot, N. J.; Ahmed, M. J.; Jouhal, K.; Hendry, B. M. [Reprint author]
CS Renal Group, Dep. Med., King's Coll. School Med. Dentistry, Bessemer Rd., London SE5 9PJ, UK
SO Nephrology Dialysis Transplantation, (1997) Vol. 12, No. 9, pp. 1921-1927.
ISSN: 0931-0509.
DT Article
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ED Entered STN: 7 Nov 1997
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TI High affinity ***choline*** ***transporter*** status in Alzheimer's disease tissue from rapid autopsy.
AU Bissette, G.; Seidler, F. J.; Nemeroff, C. B.; Slotkin, T. A. [Reprint author]
CS Duke Univ. Med. Cent., Durham, NC 27710, USA
SO Wurtman, Richard J. [Editor]; Corkin, Suzanne [Editor]; Crowdon, John H. [Editor]; Nitsch, Roger M. [Editor]. Ann. N. Y. Acad. Sci., (1996) pp. 197-204. Annals of the New York Academy of Sciences; The neurobiology of Alzheimer's disease.
Publisher: New York Academy of Sciences, 2 East 63rd Street, New York, New York 10021, USA. Series: Annals of the New York Academy of Sciences.
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TI Information theory analysis of the relationship between primary sequence structure and ligand recognition among a class of facilitated transporters.
AU Williamson, Rufus M.
CS Dep. Biotechnol., Parke-Davis Pharmaceutical Res., Div. Warner-Lamberg Co., Ann Arbor, MI 48106-1047, USA
SO Journal of Theoretical Biology, (1995) Vol. 174, No. 2, pp. 179-188.
CODEN: JTBIAP. ISSN: 0022-5193.
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TI Infected erythrocyte choline carrier inhibitors: Exploring some potentialities inside Plasmodium phospholipid metabolism for eventual resistance acquisition.
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CS CNRS URA 1856, Case 107, Place E. Bataillon, 34095 Montpellier Cedex 5, France
SO Memorias do Instituto Oswaldo Cruz Rio de Janeiro, (1994) Vol. 89, No. SUPPL. 2, pp. 91-97.
CODEN: MIOCAS. ISSN: 0074-0276.
DT Article
LA English
ED Entered STN: 31 May 1995
Last Updated on STN: 11 Jul 1995

L3 ANSWER 8 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1995:224568 BIOSIS
DN PREV199598238868
TI Alzheimer's disease: Fundamental and therapeutic aspects.
AU Schorderet, M.
CS Dep. Pharmacologie, Centre Med. Universitaire, 1 rue Michel Servet, CH-1211 Geneve 4, Switzerland
SO Experientia (Basel), (1995) Vol. 51, No. 2, pp. 99-105.
CODEN: EXPEAM. ISSN: 0014-4754.
DT Article
General Review; (Literature Review)
LA English
ED Entered STN: 31 May 1995
Last Updated on STN: 1 Jun 1995

L3 ANSWER 9 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1995:93807 BIOSIS
DN PREV199598108107
TI The effects of trimethylamine on the ***human*** erythrocyte ***choline*** ***transporter*** : Implications for uraemia.
AU Flanagan, G. J.; Leigh, J.; Ellory, J. C.
CS Univ. Lab. Physiol., Univ. Oxford, Parks Road, Oxford OX1 3PT, USA
SO Journal of Physiology (Cambridge), (1994) Vol. 481P, No. 0, pp. 35P-36P.
Meeting Info.: Scientific Meeting of the Physiological Society. Aberdeen, Scotland, UK. September 14-16, 1994.
CODEN: JPHYA7. ISSN: 0022-3751.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 1 Mar 1995
Last Updated on STN: 2 Mar 1995

L3 ANSWER 10 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1994:473136 BIOSIS
DN PREV199497486136
TI Cloning and sequencing of a putative high affinity ***choline*** ***transporter*** cDNA from ***human*** brain.
AU Barnwell, L. F. S.; Gresham, A. M.; Chaudhuri, G.; Townsel, J. G.
CS Div. Biomedical Sci., Physiol. Dep., Meharry Med. Coll., Nashville, TN 37208, USA
SO Society for Neuroscience Abstracts, (1994) Vol. 20, No. 1-2, pp. 533.
Meeting Info.: 24th Annual Meeting of the Society for Neuroscience. Miami Beach, Florida, USA. November 13-18, 1994.
ISSN: 0190-5295.
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
Conference; (Meeting Poster)
LA English
ED Entered STN: 31 Oct 1994
Last Updated on STN: 1 Nov 1994

L3 ANSWER 11 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1994:439305 BIOSIS
DN PREV199497452305

TI Overexpression of the high affinity ***choline*** ***transporter*** in cortical regions affected by Alzheimer's disease: Evidence from rapid autopsy studies.
AU Slotkin, T. A. [Reprint author]; Nemeroff, C. B.; Bissette, G.; Seidler, F. J.
CS Box 3813/Dep. Pharmacol., Duke Univ. Med. Cent., Durham, NC 27710, USA
SO Journal of Clinical Investigation, (1994) Vol. 94, No. 2, pp. 696-702.
CODEN: JCINAO. ISSN: 0021-9738.
DT Article
LA English
ED Entered STN: 11 Oct 1994
Last Updated on STN: 12 Oct 1994

L3 ANSWER 12 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1993:525981 BIOSIS
DN PREV199396139388
TI Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2.
AU Rylett, R. J. [Reprint author]; Goddard, S.; Lambros, A.
CS Dep. Physiol., Med. Sci. Build., Univ. Western Ontario, London, ON, Canda N6A 5C1, canada
SO Journal of Neurochemistry, (1993) Vol. 61, No. 4, pp. 1388-1397.
CODEN: JONRA9. ISSN: 0022-3042.
DT Article
LA English
ED Entered STN: 19 Nov 1993
Last Updated on STN: 20 Nov 1993

L3 ANSWER 13 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1993:392990 BIOSIS
DN PREV199396068290
TI Pharmacokinetics of two partial benzodiazepine receptor agonistic beta-carboline derivatives in healthy volunteers.
AU Krause, W. [Reprint author]; Dorow, R.
CS Postfach 65 03 11, W-1000 Berlin 65, Germany
SO Arzneimittel-Forschung, (1993) Vol. 43, No. 5, pp. 511-515.
CODEN: ARZNAD. ISSN: 0004-4172.
DT Article
LA English
ED Entered STN: 23 Aug 1993
Last Updated on STN: 28 Sep 1993

L3 ANSWER 14 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1992:201743 BIOSIS
DN PREV199242094818; BR42:94818
TI PARTIAL PURIFICATION OF LOW AFFINITY ***CHOLINE*** ***TRANSPORTER*** FROM ***HUMAN*** LUNG ADENOCARCINOMA CELLS A549.
AU ZIMMERMAN U-J P [Reprint author]; FISHER A B
CS INST ENVIRON MED, UNIV PA, SCH MED, PHILADELPHIA, PA 19104, USA
SO Biophysical Journal, (1992) Vol. 61, No. 2 PART 2, pp. A93.
Meeting Info.: JOINT ANNUAL MEETING OF THE BIOPHYSICAL SOCIETY AND THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY, HOUSTON, TEXAS, USA, FEBRUARY 9-13, 1992. BIOPHYS J.
CODEN: BIOJAU. ISSN: 0006-3495.
DT Conference; (Meeting)
FS BR
LA ENGLISH
ED Entered STN: 16 Apr 1992
Last Updated on STN: 2 May 1992

L3 ANSWER 15 OF 75 BIOSIS COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1992:156489 BIOSIS
DN PREV199242072689; BR42:72689
TI PARTIAL PURIFICATION OF LOW AFFINITY ***CHOLINE*** ***TRANSPORTER*** FROM ***HUMAN*** LUNG ADENOCARCINOMA CELLS A549.
AU ZIMMERMAN U-J P [Reprint author]; FISHER A B
CS INST ENVIRON MED, UNIV PA SCH MED, PHILADELPHIA, PA 19104, USA
SO FASEB Journal, (1992) Vol. 6, No. 1, pp. A93.
Meeting Info.: JOINT MEETING OF THE AMERICAN SOCIETY FOR BIOCHEMISTRY AND MOLECULAR BIOLOGY/BIOPHYSICAL SOCIETY, HOUSTON, TEXAS, USA, FEBRUARY 9-13, 1992. FASEB (FED AM SOC EXP BIOL) J.
CODEN: FAJOEC. ISSN: 0892-6638.

DT Conference; (Meeting)
FS BR
LA ENGLISH
ED Entered STN: 18 Mar 1992
Last Updated on STN: 19 Mar 1992

L3 ANSWER 16 OF 75 BIOTECHNO COPYRIGHT 2004 Elsevier Science B.V. on STN
AN 1998:28086897 BIOTECHNO
TI Antimalarial activity of 77 phospholipid polar head analogs: Close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU Ancelin M.L.; Calas M.; Bompart J.; Cordina G.; Martin D.; Bari M.B.; Jei T.; Druilhe P.; Vial H.J.
CS Dr. M.L. Ancelin, CNRS UMR 5539, Department of Biologie-Sante, Place E. Bataillon, 34095 Montpellier Cedex 5, France.
SO Blood, ***(15 FEB 1998)*** , 91/4 (1426-1437), 37 reference(s)
CODEN: BLOOAW ISSN: 0006-4971
DT Journal; Article
CY United States
LA English
SL English

L3 ANSWER 17 OF 75 CABA COPYRIGHT 2004 CABI on STN
AN 1998:165952 CABA
DN 19980807255
TI Antimalarial activity of 77 phospholipid polar head analogs: close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU Ancelin, M. L.; Calas, M.; Bompart, J.; Cordina, G.; Martin, D.; Ben Bari, M.; Jei, T.; Druilhe, P.; Vial, H. J.; Bari, M. B.
CS Department of Biologie-Sante, CP 107, UM II, Place E. Bataillon, 34095 Montpellier, France.
SO Blood, (***1998***) Vol. 91, No. 4, pp. 1426-1437. 37 ref.
ISSN: 0006-4971
DT Journal
LA English
ED Entered STN: 19981111
Last Updated on STN: 19981111

L3 ANSWER 18 OF 75 CANCERLIT on STN
AN 1999075214 CANCERLIT
DN 99075214 PubMed ID: 9859871
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells.
AU Eaton B M; Sooranna S R
CS Department of Maternal and Fetal Medicine, Imperial College School of Medicine, Chelsea and Westminster Hospital, London, UK.
SO PLACENTA, ***(1998 Nov)*** 19 (8) 663-9.
Journal code: 8006349. ISSN: 0143-4004.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS MEDLINE; Priority Journals
OS MEDLINE 1999075214
EM 199903
ED Entered STN: 20000616
Last Updated on STN: 20021115

L3 ANSWER 19 OF 75 CANCERLIT on STN
AN 94142576 CANCERLIT
DN 94142576 PubMed ID: 1343697
TI Basic biochemical investigations as rationale for the design of original antimalarial drugs. An example of phospholipid metabolism.
AU Vial H J; Angelin M L; Elabbadi N; Calas M; Cordinas G; Giral L
CS Laboratoire de Chimie Organique Structurale, CNRS URA 530, Montpilleir, France.
SO MEMORIAS DO INSTITUTO OSWALDO CRUZ, ***(1992)*** 87 Suppl 3 251-61.
Ref: 57
Journal code: 7502619. ISSN: 0074-0276.
CY Brazil
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS MEDLINE; Priority Journals
OS MEDLINE 94142576

EM 199403
ED Entered STN: 19990618
Last Updated on STN: 19990618

L3 ANSWER 20 OF 75 CANCERLIT on STN
AN 93389490 CANCERLIT
DN 93389490 PubMed ID: 8376993
TI Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2.
AU Rylett R J; Goddard S; Lambros A
CS Department of Physiology, University of Western Ontario, London, Canada.
SO JOURNAL OF NEUROCHEMISTRY, ***(1993 Oct)*** 61 (4) 1388-97.
Journal code: 2985190R. ISSN: 0022-3042.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS MEDLINE; Priority Journals
OS MEDLINE 93389490
EM 199310
ED Entered STN: 19941107
Last Updated on STN: 19970509

L3 ANSWER 21 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1999:1213 CAPLUS
DN 130:194780
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells
AU Eaton, B. M.; Sooranna, S. R.
CS Department of Maternal and Fetal Medicine, Division of Paediatrics, Obstetrics and Gynaecology, Imperial College School of Medicine, Chelsea and Westminster Hospital, London, SW10 9NH, UK
SO Placenta (***1998***), 19(8), 663-669
CODEN: PLACDF; ISSN: 0143-4004
PB W. B. Saunders Co. Ltd.
DT Journal
LA English
RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 22 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:105729 CAPLUS
DN 128:238968
TI Antimalarial activity of 77 phospholipid polar head analogs: close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU Ancelin, Marie L.; Calas, Michele; Bompart, Jacques; Cordina, Gerard; Martin, Dominique; Bari, Mohammed Ben; Jei, Taib; Druilhe, Pierre; Vial, Henri J.
CS CNRS UMR 5539, Department of Biologie-Sante, Montpellier, 34095, Fr.
SO Blood (***1998***), 91(4), 1426-1437
CODEN: BLOOAW; ISSN: 0006-4971
PB W. B. Saunders Co.
DT Journal
LA English
RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 23 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1996:427013 CAPLUS
DN 125:77049
TI A dopamine transporter in ***human*** erythrocytes: Modulation by insulin
AU Azoui, Rachida; Cuche, Jean-Louis; Renaud, Jean-Francois; Safar, Michel; Dagher, Georges
CS INSERM, Faculty Medicine, Paris, 75 270/06, Fr.
SO Experimental Physiology (***1996***), 81(3), 421-434
CODEN: EXPHEZ; ISSN: 0958-0670
PB Cambridge University Press
DT Journal
LA English

L3 ANSWER 24 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:238497 CAPLUS
TI The effects of trimethylamine on the ***human*** erythrocyte ***choline*** ***transporter*** : implications for uremia
AU Flanagan, G. J.; Leigh, J.; Ellory, J. C.

CS Univ. Lab. Physiology, Univ. Oxford, Oxford, OX1 3PT, UK
SO Journal of Physiology (Cambridge, United Kingdom) (***1994***), 481.P, 35P-6P
CODEN: JPHYA7; ISSN: 0022-3751
PB Cambridge University Press
DT Journal
LA English

L3 ANSWER 25 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:531570 CAPLUS
DN 121:131570
TI Overexpression of the high affinity ***choline*** ***transporter*** in cortical regions affected by Alzheimer's disease. Evidence from rapid autopsy studies
AU Slotkin, T. A.; Nemeroff, C. B.; Bissette, G.; Seidler, F. J.
CS Medical Center, Duke University, Durham, NC, 27710, USA
SO Journal of Clinical Investigation (***1994***), 94(2), 696-702
CODEN: JCINAO; ISSN: 0021-9738
DT Journal
LA English

L3 ANSWER 26 OF 75 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:663163 CAPLUS
DN 119:263163
TI Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2
AU Rylett, R. J.; Goddard, S.; Lambros, A.
CS Dep. Physiol., Univ. West. Ontario, London, ON, N6A 5C1, Can.
SO Journal of Neurochemistry (***1993***), 61(4), 1388-97
CODEN: JONRA9; ISSN: 0022-3042
DT Journal
LA English

L3 ANSWER 27 OF 75 DISSABS COPYRIGHT (C) 2004 ProQuest Information and Learning Company; All Rights Reserved on STN
AN 95:3716 DISSABS Order Number: AAR9432848
TI MOLECULAR PHARMACOLOGICAL STUDIES OF THE MUSCARINIC RECEPTORS AND THE CREATINE TRANSPORTER
AU WEI, HONG-BING [PH.D.]; YAMAMURA, HENRY I. [advisor]; ROESKE, WILLIAM R. [advisor]
CS THE UNIVERSITY OF ARIZONA (0009)
SO Dissertation Abstracts International, (***1994***) Vol. 55, No. 7B, p. 2570. Order No.: AAR9432848. 131 pages.
DT Dissertation
FS DAI
LA English
ED Entered STN: 19950111
Last Updated on STN: 19950111

L3 ANSWER 28 OF 75 DISSABS COPYRIGHT (C) 2004 ProQuest Information and Learning Company; All Rights Reserved on STN
AN 93:38034 DISSABS Order Number: AAR9318723
TI ISOLATION AND CHARACTERIZATION OF A SODIUM- AND CHLORIDE-DEPENDENT GABA TRANSPORTER CDNA FROM TORPEDO CALIFORNICA (SODIUM DEPENDENT)
AU SWANSON, GEOFFREY TODD [PH.D.]; CHO, ARTHUR K. [advisor]
CS UNIVERSITY OF CALIFORNIA, LOS ANGELES (0031)
SO Dissertation Abstracts International, (***1993***) Vol. 54, No. 3B, p. 1245. Order No.: AAR9318723. 159 pages.
DT Dissertation
FS DAI
LA English
ED Entered STN: 19930817
Last Updated on STN: 19930817

L3 ANSWER 29 OF 75 DRUGU COPYRIGHT 2004 THE THOMSON CORP on STN
AN 1998-12475 DRUGU M
TI Antimalarial activity of 77 phospholipid polar head analogs: close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth.
AU Ancelin M L; Calas M; Bompart J; Cordina G; Martin D; Ben Bari M; Jei T; Druilhe P; Vial H J
LO Montpellier; Paris, Fr.; Casablanca, Morocco
SO Blood (91, No. 4, 1426-37, 1998) 5 Fig. 3 Tab. 37 Ref.
CODEN: BLOOAW ISSN: 0006-4971
AV CNRS UMR 5539, Department of Biologie-Sante, CP 107, UM II, Place E. Bataillon, 34095 Montpellier Cedex 5, France.

LA English
DT Journal
FA AB; LA; CT
FS Literature

L3 ANSWER 30 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 1998393273 EMBASE
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells.
AU Eaton B.M.; Sooranna S.R.
CS B.M. Eaton, Department Maternal Fetal Medicine, Div Paediats, Obstetrics Gynaecology, Chelsea and Westminster Hospital, 369 Fulham Road, London SW10 9NH, United Kingdom
SO Placenta, (1998) 19/8 (663-669).
Refs: 28
ISSN: 0143-4004 CODEN: PLACDF
CY United Kingdom
DT Journal; Article
FS 010 Obstetrics and Gynecology
029 Clinical Biochemistry
LA English
SL English

L3 ANSWER 31 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 1998061734 EMBASE
TI Antimalarial activity of 77 phospholipid polar head analogs: Close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth.
AU Ancelin M.L.; Calas M.; Bompart J.; Cordina G.; Martin D.; Bari M.B.; Jei T.; Druilhe P.; Vial H.J.
CS Dr. M.L. Ancelin, CNRS UMR 5539, Department of Biologie-Sante, Place E. Bataillon, 34095 Montpellier Cedex 5, France
SO Blood, (15 Feb 1998) 91/4 (1426-1437).
Refs: 37
ISSN: 0006-4971 CODEN: BLOOAW
CY United States
DT Journal; Article
FS 030 Pharmacology
037 Drug Literature Index
LA English
SL English

L3 ANSWER 32 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 97271958 EMBASE
DN 1997271958
TI Characterization of ***human*** erythrocyte choline transport in chronic renal failure.
AU Riley S.P.; Talbot N.J.; Ahmed M.J.; Jouhal K.; Hendry B.M.
CS Prof. B.M. Hendry, Renal Group, Department of Medicine, King's College School Medicine Dent., Bessemer Road, London SE5 9PJ, United Kingdom
SO Nephrology Dialysis Transplantation, (1997) 12/9 (1921-1927).
Refs: 21
ISSN: 0931-0509 CODEN: NDTREA
CY United Kingdom
DT Journal; Article
FS 025 Hematology
028 Urology and Nephrology
LA English
SL English

L3 ANSWER 33 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 96156006 EMBASE
DN 1996156006
TI High affinity ***choline*** ***transporter*** status in Alzheimer's disease tissue from rapid autopsy.
AU Bissette G.; Seidler F.J.; Nemeroff C.B.; Slotkin T.A.
CS Duke University Medical Center,Durham, NC 27710, United States
SO Annals of the New York Academy of Sciences, (1996) 777/- (197-204).
ISSN: 0077-8923 CODEN: ANYAA
CY United States
DT Journal; Conference Article
FS 005 General Pathology and Pathological Anatomy

008 Neurology and Neurosurgery
LA English
SL English

L3 ANSWER 34 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 94247137 EMBASE
DN 1994247137
TI Overexpression of the high affinity ***choline*** ***transporter*** in cortical regions affected by Alzheimer's disease. Evidence from rapid autopsy studies.
AU Slotkin T.A.; Nemeroff C.B.; Bissette G.; Seidler F.J.
CS Department of Pharmacology, Duke University Medical Center, Box 3813,Durham, NC 27710, United States
SO Journal of Clinical Investigation, (1994) 94/2 (696-702).
ISSN: 0021-9738 CODEN: JCINAO
CY United States
DT Journal; Article
FS 008 Neurology and Neurosurgery
029 Clinical Biochemistry
LA English
SL English

L3 ANSWER 35 OF 75 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
AN 93285111 EMBASE
DN 1993285111
TI Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2.
AU Rylett R.J.; Goddard S.; Lambros A.
CS Department of Physiology, Medical Sciences Building, University of Western Ontario,London, Ont. N6A 5C1, Canada
SO Journal of Neurochemistry, (1993) 61/4 (1388-1397).
ISSN: 0022-3042 CODEN: JONRA
CY United States
DT Journal; Article
FS 002 Physiology
021 Developmental Biology and Teratology
LA English
SL English

L3 ANSWER 36 OF 75 Elsevier BIOBASE COPYRIGHT 2004 Elsevier Science B.V. on STN
AN 1998267021 ESBIOBASE
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells
AU Eaton B.M.; Sooranna S.R.
CS B.M. Eaton, Department Maternal Fetal Medicine, Div Paediats, Obstetrics Gynaecology, Chelsea and Westminster Hospital, 369 Fulham Road, London SW10 9NH, United Kingdom.
SO Placenta, (***1998***), 19/8 (663-669), 28 reference(s)
CODEN: PLACDF ISSN: 0143-4004
DT Journal; Article
CY United Kingdom
LA English
SL English

L3 ANSWER 37 OF 75 Elsevier BIOBASE COPYRIGHT 2004 Elsevier Science B.V. on STN
AN 1998041758 ESBIOBASE
TI Antimalarial activity of 77 phospholipid polar head analogs: Close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU Ancelin M.L.; Calas M.; Bompart J.; Cordina G.; Martin D.; Bari M.B.; Jei T.; Druilhe P.; Vial H.J.
CS Dr. M.L. Ancelin, CNRS UMR 5539, Department of Biologie-Sante, Place E. Bataillon, 34095 Montpellier Cedex 5, France.
SO Blood, ***(15 FEB 1998)*** , 91/4 (1426-1437), 37 reference(s)
CODEN: BLOOAW ISSN: 0006-4971
DT Journal; Article
CY United States
LA English
SL English

L3 ANSWER 38 OF 75 Elsevier BIOBASE COPYRIGHT 2004 Elsevier Science B.V. on STN

AN 1997198312 ESBIOBASE
TI Characterization of ***human*** erythrocyte choline transport in chronic renal failure
AU Riley S.P.; Talbot N.J.; Ahmed M.J.; Jouhal K.; Hendry B.M.
CS Prof. B.M. Hendry, Renal Group, Department of Medicine, King's College School Medicine Dent., Bessemer Road, London SE5 9PJ, United Kingdom.
SO Nephrology Dialysis Transplantation, (***1997***), 12/9 (1921-1927), 21 reference(s)
CODEN: NDTREA ISSN: 0931-0509
DT Journal; Article
CY United Kingdom
LA English
SL English

L3 ANSWER 39 OF 75 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AA047399 GenBank (R)
GenBank ACC. NO. (GBN): AA047399
GenBank VERSION (VER): AA047399.1 GI:1525584
CAS REGISTRY NO. (RN): 180761-03-9
SEQUENCE LENGTH (SQL): 283
MOLECULE TYPE (CI): mRNA; linear
DIVISION CODE (CI): Expressed sequence tag
DATE (DATE): 11 May 1997
DEFINITION (DEF): zk73h05.r1 Soares_pregnant_uterus_NbHPU Homo sapiens cDNA clone IMAGE:488505 5' similar to SW:NTCH_RAT P28570 SODIUM-DEPENDENT ***CHOLINE*** ***TRANSPORTER*** ;, mRNA sequence.
SOURCE: ***human*** .
ORGANISM (ORGN): Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
NUCLEIC ACID COUNT (NA): 47 a 69 c 81 g 75 t 11 others
COMMENT:
Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL ; contact the IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 788 Std Error: 0.00
Seq primer: -28M13 rev2 from Amersham
High quality sequence stop: 182.
REFERENCE: 1 (bases 1 to 283)
AUTHOR (AU): Hillier,L.; Lennon,G.; Becker,M.; Bonaldo,M.F.; Chiapelli,B.; Chissoe,S.; Dietrich,N.; DuBuque,T.; Favello,A.; Gish,W.; Hawkins,M. ; Hultman,M.; Kucaba,T.; Lacy,M.; Le,M.; Le,N.; Mardis,E.; Moore,B.M; Morris,M.; Parsons,J.; Prange,C.; Rifkin,L.; Rohlfing,T.; Schellenberg,K.; Soares,M.B.; Tan,F.; Thierry-Meg,J.; Trevaskis,E.; Underwood,K.; Wohldmann,P.; Waterston,R.; Wilson,R.; Marra,M.
TITLE (TI): Generation and analysis of 280,000 ***human*** expressed sequence tags
JOURNAL (SO): Genome Res., 6 (9), 807-828 (***1996***)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..283	/organism="Homo sapiens" /db-xref="GDB:3803092" /db-xref="taxon:9606" /clone="IMAGE:488505" /clone-lib="Soares-pregnant-uterus-NbHPU" /sex="female" /dev-stage="adult" /lab-host="DH10B" /note="Organ: uterus; Vector: pT7T3-Pac; Site-1: Not I; Site-2: Eco RI; 1st strand cDNA was primed with a Not I - oligo(dT) primer [5'

AACTGGAAGAATTCGCGGCCGCCTTTTTTTTTTTT
TTTTTTT 3'], double-stranded cDNA
was ligated to Eco RI adaptors
(Pharmacia), digested with Not I
and cloned into the Not I and Eco
RI sites of the modified pT7T3
vector. Library went through one
round of normalization. Library
constructed by M. Fatima Bonaldo."

SEQUENCE (SEQ):
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     1 tattcggcac gngggtgact gatggcggga tgtacgtctt ccagctgttt gactactact
    61 cggcanncgn accaccctgc tctggcaggc cttttgggag tncgtggtgg tggcctgggt
   121 gtacggagct gaccgcttca tggacgacat tgcctgtatg atcgggtacc gaccttgccc
   181 ctggatgaaa tgntgctggt ccttcttcac cccggtggtn tgcantagtn atcttgatct
   241 ttcaaacggt gtgtacttac ggagcngctg gntctacaac aaa
```

L3 ANSWER 40 OF 75 GENBANK.RTM. COPYRIGHT 2004 on STN

LOCUS (LOC): AA047465 GenBank (R)
GenBank ACC. NO. (GBN): AA047465
GenBank VERSION (VER): AA047465.1 GI:1525530
CAS REGISTRY NO. (RN): 180760-49-0
SEQUENCE LENGTH (SQL): 436
MOLECULE TYPE (CI): mRNA; linear
DIVISION CODE (CI): Expressed sequence tag
DATE (DATE): 11 May 1997
DEFINITION (DEF): zk73h05.s1 Soares_pregnant_uterus_NbHPU Homo sapiens
cDNA clone IMAGE:488505 3' similar to SW:NTCH_RAT
P28570 SODIUM-DEPENDENT ***CHOLINE***
TRANSPORTER ;, mRNA sequence.
SOURCE: ***human*** .
ORGANISM (ORGN): Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini;
Hominidae; Homo
NUCLEIC ACID COUNT (NA): 90 a 116 c 135 g 86 t 9 others
COMMENT:
Contact: Wilson RK
Washington University School of Medicine
4444 Forest Park Parkway, Box 8501, St. Louis, MO 63108
Tel: 314 286 1800
Fax: 314 286 1810
Email: est@watson.wustl.edu
This clone is available royalty-free through LLNL ; contact the
IMAGE Consortium (info@image.llnl.gov) for further information.
Insert Length: 788 Std Error: 0.00
Seq primer: -40M13 fwd. from Amersham
High quality sequence stop: 352.
REFERENCE: 1 (bases 1 to 436)
AUTHOR (AU): Hillier,L.; Lennon,G.; Becker,M.; Bonaldo,M.F.;
Chiapelli,B.; Chissoe,S.; Dietrich,N.; DuBuque,T.;
Favello,A.; Gish,W.; Hawkins,M. ; Hultman,M.;
Kucaba,T.; Lacy,M.; Le,M.; Le,N.; Mardis,E.; Moore,B.M;
Morris,M.; Parsons,J.; Prange,C.; Rifkin,L.;
Rohlfing,T.; Schellenberg,K.; Soares,M.B.; Tan,F.;
Thierry-Meg,J.; Trevaskis,E.; Underwood,K.;
Wohldmann,P.; Waterston,R.; Wilson,R.; Marra,M.
TITLE (TI): Generation and analysis of 280,000 ***human***
expressed sequence tags
JOURNAL (SO): Genome Res., 6 (9), 807-828 (***1996***)

FEATURES (FEAT):

Feature Key	Location	Qualifier
source	1..436	/organism="Homo sapiens" /db-xref="GDB:3803092" /db-xref="taxon:9606" /clone="IMAGE:488505" /clone-lib="Soares-pregnant-uterus -NbHPU" /sex="female" /dev-stage="adult" /lab-host="DH10B" /note="Organ: uterus; Vector: pT7T3-Pac; Site-1: Not I; Site-2:

Eco RI; 1st strand cDNA was primed with a Not I - oligo(dT) primer [5' AACTGGAAGAATTCGCGGCCGCCTTTTTTTTTTTT TTTTTTT 3'], double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library went through one round of normalization. Library constructed by M. Fatima Bonaldo."

SEQUENCE (SEQ):

```
     1 gtgatatttt tggcgtttta ttaaaaatgg aaaaagttgt tttagtgagc actcatggtg
    61 cttnctcccc ncnnccccca ggcagacccc aaaagtgtca gggaaaggca ggccccctgg
   121 nnggttgcgg tggggctgaa gcagccactg ctatggctac cagaggtgag ctggtgatgt
   181 gagctgagtt gtcacatgac actctccacc acgacgacct tgctgctctc ggacactggg
   241 gtcagggtgg tcaggcccct gacatctgcn tnctgagctc ggtactccaa gtggtggagg
   301 ccccagatgc actnggtcag gtgctgccag cgctcagcca tggtgccctt tggccctgaa
   361 ggaggcagcc caggaggttg cagcggcacg aacagcatgg aaggacaggg cgaaaggcca
   421 ggcccatggc ctcaac
```

L3 ANSWER 41 OF 75 LIFESCI COPYRIGHT 2004 CSA on STN
AN 93:7018 LIFESCI
TI Saturable and non-saturable components of choline transport in Plasmodium -infected mammalian erythrocytes: Possible role of experimental conditions.
AU Ancelin, M.L.; Vial, H.J.
CS CNRS U.A. 530, Dep. Biol.-Sante, USTL Bt 24, Case postale 107, Place Eugene Bataillon, 34095 Montpellier Cedex 5, France
SO BIOCHEM. J., (***1992***) vol. 283, no. 2, pp. 619-621.
DT Journal
FS K
LA English

L3 ANSWER 42 OF 75 MEDLINE on STN
AN 1999075214 MEDLINE
DN PubMed ID: 9859871
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells.
AU Eaton B M; Sooranna S R
CS Department of Maternal and Fetal Medicine, Imperial College School of Medicine, Chelsea and Westminster Hospital, London, UK.
SO Placenta, ***(1998 Nov)*** 19 (8) 663-9.
Journal code: 8006349. ISSN: 0143-4004.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199903
ED Entered STN: 19990316
Last Updated on STN: 20021030
Entered Medline: 19990303

L3 ANSWER 43 OF 75 MEDLINE on STN
AN 1998288250 MEDLINE
DN PubMed ID: 9622614
TI Age-related changes in rodent cortical acetylcholine and cognition: main effects of age versus age as an intervening variable.
AU Sarter M; Bruno J P
CS Department of Psychology and Neuroscience Program, The Ohio State University, 27 Townshend Hall, Columbus, OH 43210, USA..
msarter@magnus.acs.ohio-state.edu
NC AG10173 (NIA)
NS32938 (NINDS)
SO Brain research. Brain research reviews, ***(1998 Jul)*** 27 (2) 143-56. Ref: 124
Journal code: 8908638. ISSN: 0165-0173.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, ACADEMIC)
LA English
FS Priority Journals
EM 199808

ED Entered STN: 19980820
Last Updated on STN: 19980820
Entered Medline: 19980807

L3 ANSWER 44 OF 75 MEDLINE on STN
AN 1998122796 MEDLINE
DN PubMed ID: 9454774
TI Antimalarial activity of 77 phospholipid polar head analogs: close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth.
AU Ancelin M L; Calas M; Bompart J; Cordina G; Martin D; Ben Bari M; Jei T; Druilhe P; Vial H J
CS CNRS UMR 5539, Department of Biologie-Sante, Montpellier, France.
SO Blood, ***(1998 Feb 15)*** 91 (4) 1426-37.
Journal code: 7603509. ISSN: 0006-4971.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199803
ED Entered STN: 19980312
Last Updated on STN: 19980312
Entered Medline: 19980303

L3 ANSWER 45 OF 75 MEDLINE on STN
AN 1998041525 MEDLINE
DN PubMed ID: 9375677
TI Enhanced hemicholinium binding and attenuated dendrite branching in cognitively impaired acetylcholinesterase-transgenic mice.
AU Beeri R; Le Novere N; Mervis R; Huberman T; Grauer E; Changeux J P; Soreq H
CS Department of Biological Chemistry, Life Sciences Institute, Hebrew University of Jerusalem, Israel.
SO Journal of neurochemistry, ***(1997 Dec)*** 69 (6) 2441-51.
Journal code: 2985190R. ISSN: 0022-3042.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199712
ED Entered STN: 19980109
Last Updated on STN: 19980109
Entered Medline: 19971212

L3 ANSWER 46 OF 75 MEDLINE on STN
AN 97451391 MEDLINE
DN PubMed ID: 9306344
TI Characterization of ***human*** erythrocyte choline transport in chronic renal failure.
AU Riley S P; Talbot N J; Ahmed M J; Jouhal K; Hendry B M
CS Department of Medicine, King's College School of Medicine and Dentistry, London, UK.
SO Nephrology, dialysis, transplantation : official publication of the European Dialysis and Transplant Association - European Renal Association, ***(1997 Sep)*** 12 (9) 1921-7.
Journal code: 8706402. ISSN: 0931-0509.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199711
ED Entered STN: 19971224
Last Updated on STN: 19971224
Entered Medline: 19971106

L3 ANSWER 47 OF 75 MEDLINE on STN
AN 96187018 MEDLINE
DN PubMed ID: 8624084
TI High affinity ***choline*** ***transporter*** status in Alzheimer's disease tissue from rapid autopsy.
AU Bissette G; Seidler F J; Nemeroff C B; Slotkin T A
CS Department of Psychiatry, Duke University Medical Center, Durham, North Carolina 27710, USA.
NC AG-05128 (NIA)
MH-40524 (NIMH)
SO Annals of the New York Academy of Sciences, ***(1996 Jan 17)*** 777

197-204. Ref: 12
Journal code: 7506858. ISSN: 0077-8923.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199606
ED Entered STN: 19960627
Last Updated on STN: 19980206
Entered Medline: 19960614

L3 ANSWER 48 OF 75 MEDLINE on STN
AN 96112058 MEDLINE
DN PubMed ID: 8615867
TI Inhibition of choline uptake in syncytial microvillus membrane vesicles of ***human*** term placenta. Specificity and nature of interaction.
AU Van der Aa E M; Wouterse A C; Copius Peereboom-Stegeman J H; Russel F G
CS Department of Pharmacology, Faculty of Medical Sciences, University of Nijmegen, The Netherlands.
SO Biochemical pharmacology, ***(1995 Nov 27)*** 50 (11) 1873-8.
Journal code: 0101032. ISSN: 0006-2952.
CY ENGLAND: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199606
ED Entered STN: 19960613
Last Updated on STN: 19960613
Entered Medline: 19960606

L3 ANSWER 49 OF 75 MEDLINE on STN
AN 95347617 MEDLINE
DN PubMed ID: 7622069
TI Cloning and sequencing of a cDNA encoding a novel member of the ***human*** brain GABA/noradrenaline neurotransmitter transporter family.
AU Barnwell L F; Chaudhuri G; Townsel J G
CS Department of Physiology, Meharry Medical College, Nashville, TN 37208, USA.
NC RR08037 (NCRR)
SO Gene, ***(1995 Jul 4)*** 159 (2) 287-8.
Journal code: 7706761. ISSN: 0378-1119.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
OS GENBANK-U17986
EM 199508
ED Entered STN: 19950911
Last Updated on STN: 19950911
Entered Medline: 19950831

L3 ANSWER 50 OF 75 MEDLINE on STN
AN 94355363 MEDLINE
DN PubMed ID: 8075137
TI Choline transport in ***human*** placental brush-border membrane vesicles.
AU Grassl S M
CS Department of Pharmacology, State University of New York, Health Science Center at Syracuse 13210.
NC HD29940 (NICHD)
SO Biochimica et biophysica acta, ***(1994 Aug 24)*** 1194 (1) 203-13.
Journal code: 0217513. ISSN: 0006-3002.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199410
ED Entered STN: 19941013
Last Updated on STN: 19970203
Entered Medline: 19941006

L3 ANSWER 51 OF 75 MEDLINE on STN
AN 94335558 MEDLINE

DN PubMed ID: 8057783
TI 'Choline/orphan V8-2-1/creatine transporter' mRNA is expressed in nervous, renal and gastrointestinal systems.
AU Gonzalez A M; Uhl G R
CS Molecular Neurobiology Branch, National Institute on Drug Abuse, Johns Hopkins University School of Medicine, Baltimore, MD 21224.
SO Brain research. Molecular brain research, ***(1994 May)*** 23 (3) 266-70.
Journal code: 8908640. ISSN: 0169-328X.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199409
ED Entered STN: 19940920
Last Updated on STN: 19940920
Entered Medline: 19940912

L3 ANSWER 52 OF 75 MEDLINE on STN
AN 94314975 MEDLINE
DN PubMed ID: 8040324
TI Overexpression of the high affinity ***choline*** ***transporter*** in cortical regions affected by Alzheimer's disease. Evidence from rapid autopsy studies.
CM Comment in: J Clin Invest. 1994 Aug;94(2):470. PubMed ID: 8040298
AU Slotkin T A; Nemeroff C B; Bissette G; Seidler F J
CS Department of Pharmacology, Duke University Medical Center, Durham, North Carolina 27710.
NC AG-05128 (NIA)
MH-40524 (NIMH)
SO Journal of clinical investigation, ***(1994 Aug)*** 94 (2) 696-702.
Journal code: 7802877. ISSN: 0021-9738.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Abridged Index Medicus Journals; Priority Journals
EM 199408
ED Entered STN: 19940905
Last Updated on STN: 19980206
Entered Medline: 19940825

L3 ANSWER 53 OF 75 MEDLINE on STN
AN 94308764 MEDLINE
DN PubMed ID: 8035169
TI Unsolved problems in the cholinergic nervous system.
CM Comment in: J Neurochem. 1995 Jan;64(1):466-7. PubMed ID: 7798949
AU Cooper J R
CS Department of Pharmacology, Yale University School of Medicine, New Haven, Connecticut 06510.
NC NS 27672 (NINDS)
SO Journal of neurochemistry, ***(1994 Aug)*** 63 (2) 395-9. Ref: 27
Journal code: 2985190R. ISSN: 0022-3042.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199408
ED Entered STN: 19940825
Last Updated on STN: 19980206
Entered Medline: 19940812

L3 ANSWER 54 OF 75 MEDLINE on STN
AN 94142576 MEDLINE
DN PubMed ID: 1343697
TI Basic biochemical investigations as rationale for the design of original antimalarial drugs. An example of phospholipid metabolism.
AU Vial H J; Angelin M L; Elabbadi N; Calas M; Cordinas G; Giral L
CS Laboratoire de Chimie Organique Structurale, CNRS URA 530, Montpilleir, France.
SO Memorias do Instituto Oswaldo Cruz, ***(1992)*** 87 Suppl 3 251-61.
Ref: 57
Journal code: 7502619. ISSN: 0074-0276.
CY Brazil
DT Journal; Article; (JOURNAL ARTICLE)

General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199403
ED Entered STN: 19940330
Last Updated on STN: 19940330
Entered Medline: 19940311

L3 ANSWER 55 OF 75 MEDLINE on STN
AN 94128110 MEDLINE
DN PubMed ID: 8297374
TI The putative rat ***choline*** ***transporter*** CHOT1 transports creatine and is highly expressed in neural and muscle-rich tissues.
AU Schloss P; Mayser W; Betz H
CS Max-Planck-Institut fur Hirnforschung, Abteilung Neurochemie, Frankfurt, Germany.
SO Biochemical and biophysical research communications, ***(1994 Jan 28)*** 198 (2) 637-45.
Journal code: 0372516. ISSN: 0006-291X.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199403
ED Entered STN: 19940314
Last Updated on STN: 19950206
Entered Medline: 19940301

L3 ANSWER 56 OF 75 MEDLINE on STN
AN 94068904 MEDLINE
DN PubMed ID: 8248508
TI Acetylcholine turnover and release: the influence of energy metabolism and systemic choline availability.
AU Scremin O U; Jenden D J
CS West Los Angeles VA Medical Center, CA.
SO Progress in brain research, ***(1993)*** 98 191-5. Ref: 34
Journal code: 0376441. ISSN: 0079-6123.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199401
ED Entered STN: 19940201
Last Updated on STN: 20000303
Entered Medline: 19940106

L3 ANSWER 57 OF 75 MEDLINE on STN
AN 94068900 MEDLINE
DN PubMed ID: 8248504
TI Regulation of the synthesis of acetylcholine.
AU Rylett R J; Schmidt B M
CS Department of Physiology, University of Western Ontario, London, Canada.
SO Progress in brain research, ***(1993)*** 98 161-6. Ref: 73
Journal code: 0376441. ISSN: 0079-6123.
CY Netherlands
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
LA English
FS Priority Journals
EM 199401
ED Entered STN: 19940201
Last Updated on STN: 19980206
Entered Medline: 19940106

L3 ANSWER 58 OF 75 MEDLINE on STN
AN 93389490 MEDLINE
DN PubMed ID: 8376993
TI Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2.
AU Rylett R J; Goddard S; Lambros A
CS Department of Physiology, University of Western Ontario, London, Canada.
SO Journal of neurochemistry, ***(1993 Oct)*** 61 (4) 1388-97.

Journal code: 2985190R. ISSN: 0022-3042.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199310
ED Entered STN: 19931105
Last Updated on STN: 19980206
Entered Medline: 19931021

L3 ANSWER 59 OF 75 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 1999-0037099 PASCAL
CP Copyright .COPYRGT. 1999 INIST-CNRS. All rights reserved.
TIEN Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells
AU EATON B. M.; SOORANNA S. R.
CS Department of Maternal and Fetal Medicine, Division of Paediatrics, Obstetrics and Gynaecology, Imperial College School of Medicine, Chelsea and Westminster Hospital, 369 Fulham Road, London SW10 9NH, United Kingdom
SO Placenta : (Eastbourne), ***(1998)*** , 19(8), 663-669, 28 refs.
ISSN: 0143-4004 CODEN: PLACDF
DT Journal
BL Analytic
CY United Kingdom
LA English
AV INIST-18818, 354000072970480140

L3 ANSWER 60 OF 75 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 1998-0151581 PASCAL
CP Copyright .COPYRGT. 1998 INIST-CNRS. All rights reserved.
TIEN Antimalarial activity of 77 phospholipid polar head analogs : Close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU ANCELIN M. L.; CALAS M.; BOMPART J.; CORDINA G.; MARTIN D.; BEN BARI M.; TAIB JEI; DRUILHE P.; VIAL H. J.
CS CNRS UMR 5539, Department of Biologie-Sante, Montpellier, France; Laboratoire des Aminoacides, Peptides et proteines, CNRS UMR, 5810, Montpellier, France; Laboratoire de Chimie Organique Pharmaceutique, Faculte de Pharmacie, Montpellier, France; Departement de Chimie, Faculte des Sciences Ben M'Sik, Casablanca, Morocco; Laboratoire de Parasitologie Bio-Medicale, Institut Pasteur, Paris, France
SO Blood, ***(1998)*** , 91(4), 1426-1437, 37 refs.
ISSN: 0006-4971
DT Journal
BL Analytic
CY United States
LA English
AV INIST-3178, 354000078335600350

L3 ANSWER 61 OF 75 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 1997-0461554 PASCAL
CP Copyright .COPYRGT. 1997 INIST-CNRS. All rights reserved.
TIEN Characterization of ***human*** erythrocyte choline transport in chronic renal failure
AU RILEY S. P.; TALBOT N. J.; AHMED M. J.; JOUHAL K.; HENDRY B. M.
CS Renal Group, Department of Medicine, King's College School of Medicine and Dentistry, London, United Kingdom
SO Nephrology, dialysis, transplantation, ***(1997)*** , 12(9), 1921-1927, 21 refs.
ISSN: 0931-0509 CODEN: NDTREA
DT Journal
BL Analytic
CY United Kingdom
LA English
AV INIST-21215, 354000068981010210

L3 ANSWER 62 OF 75 PASCAL COPYRIGHT 2004 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 1994-0058458 PASCAL
CP Copyright .COPYRGT. 1994 INIST-CNRS. All rights reserved.
TIEN Regulation of expression of cholinergic neuronal phenotypic markers in neuroblastoma LA-N-2

AU RYLETT R. J.; GODDARD S.; LAMBROS A.
CS Univ. Western Ontario, dep. physiology, London ON N6A 5C1, Canada
SO Journal of neurochemistry, ***(1993)*** , 61(4), 1388-1397, refs. 1 p.
ISSN: 0022-3042 CODEN: JONRA9
DT Journal
BL Analytic
CY United States
LA English
AV INIST-4037, 354000048451950230

L3 ANSWER 63 OF 75 PROMT COPYRIGHT 2004 Gale Group on STN

ACCESSION NUMBER: 1998:235049 PROMT
TITLE: Therapy (Malaria) Antimalarial Activity and PL Metabolism Impairment Are Correlated
SOURCE: World Disease Weekly Plus, (***11 May 1998***) pp. N/A.
LANGUAGE: English
WORD COUNT: 535
FULL TEXT IS AVAILABLE IN THE ALL FORMAT

L3 ANSWER 64 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1998:922086 SCISEARCH
GA The Genuine Article (R) Number: 143QF
TI Regulation of the choline transport system in superfused microcarrier cultures of BeWo cells
AU Eaton B M (Reprint); Sooranna S R
CS IMPERIAL COLL SCH MED, CHELSEA & WESTMINSTER HOSP, DIV PAEDIAT OBSTET & GYNAECOL, LONDON SW10 9NH, ENGLAND (Reprint)
CYA ENGLAND
SO PLACENTA, (***NOV 1998***) Vol. 19, No. 8, pp. 663-669.
Publisher: W B SAUNDERS CO LTD, 24-28 OVAL RD, LONDON NW1 7DX, ENGLAND.
ISSN: 0143-4004.
DT Article; Journal
FS LIFE; CLIN
LA English
REC Reference Count: 28
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 65 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 1998:148652 SCISEARCH
GA The Genuine Article (R) Number: YW515
TI Antimalarial activity of 77 phospholipid polar head analogs: Close correlation between inhibition of phospholipid metabolism and in vitro Plasmodium falciparum growth
AU Ancelin M L (Reprint); Calas M; Bompart J; Cordina G; Martin D; BenBari M; Jei T; Druilhe P; Vial H J
CS UNIV MONTPELLIER 2, DEPT BIOL SANTE, CNRS, UMR 5539, PL E BATAILLON, F-34095 MONTPELLIER 5, FRANCE (Reprint); CNRS, UMR 5810, LAB AMINOACIDES PEPTIDES & PROT, MONTPELLIER, FRANCE; FAC PHARM MONTPELLIER, LAB CHIM ORGAN PHARMACEUT, MONTPELLIER, FRANCE; FAC SCI BEN MSIK, DEPT CHIM, CASABLANCA, MOROCCO; INST PASTEUR, LAB PARASITOL BIOMED, PARIS, FRANCE
CYA FRANCE; MOROCCO
SO BLOOD, (***15 FEB 1998***) Vol. 91, No. 4, pp. 1426-1437.
Publisher: W B SAUNDERS CO, INDEPENDENCE SQUARE WEST CURTIS CENTER, STE 300, PHILADELPHIA, PA 19106-3399.
ISSN: 0006-4971.
DT Article; Journal
FS LIFE; CLIN
LA English
REC Reference Count: 37
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 66 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 97:709608 SCISEARCH
GA The Genuine Article (R) Number: XW588
TI Characterization of ***human*** erythrocyte choline transport in chronic renal failure
AU Riley S P; Talbot N J; Ahmed M J; Jouhal K; Hendry B M (Reprint)
CS UNIV LONDON KINGS COLL, SCH MED & DENT, DEPT MED, RENAL GRP, BESSEMER RD, LONDON SE5 9PJ, ENGLAND (Reprint); UNIV LONDON KINGS COLL, SCH MED & DENT, DEPT MED, RENAL GRP, LONDON SE5 9PJ, ENGLAND
CYA ENGLAND
SO NEPHROLOGY DIALYSIS TRANSPLANTATION, (***SEP 1997***) Vol. 12, No. 9,

pp. 1921-1927.
Publisher: OXFORD UNIV PRESS, GREAT CLARENDON ST, OXFORD, ENGLAND OX2 6DP.
ISSN: 0931-0509.
DT Article; Journal
FS CLIN
LA English
REC Reference Count: 21
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 67 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 95:485571 SCISEARCH
GA The Genuine Article (R) Number: RH913
TI CLONING AND SEQUENCING OF A CDNA-ENCODING A NOVEL MEMBER OF THE ***HUMAN*** BRAIN GABA/NORADRENALINE NEUROTRANSMITTER TRANSPORTER FAMILY
AU BARNWELL L F S; CHAUDHURI G; TOWNSEL J G (Reprint)
CS MEHARRY MED COLL, DEPT PHYSIOL, 1005 DB TODD BLVD, NASHVILLE, TN, 37208 (Reprint); MEHARRY MED COLL, DEPT PHYSIOL, NASHVILLE, TN, 37208; MEHARRY MED COLL, DIV BIOMED SCI, NASHVILLE, TN, 37208
CYA USA
SO GENE, (***04 JUL 1995***) Vol. 159, No. 2, pp. 287-288.
ISSN: 0378-1119.
DT Note; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 9
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 68 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 95:145540 SCISEARCH
GA The Genuine Article (R) Number: QF850
TI IN-SITU HYBRIDIZATION ANALYSIS OF CHOT1, A CREATINE TRANSPORTER, IN THE RAT CENTRAL-NERVOUS-SYSTEM
AU HAPPE H K; MURRIN L C (Reprint)
CS UNIV NEBRASKA, MED CTR, DEPT PHARMACOL, 600 S 42ND ST, OMAHA, NE, 68198 (Reprint); UNIV NEBRASKA, MED CTR, DEPT PHARMACOL, OMAHA, NE, 68198; UNIV NEBRASKA, MED CTR, NEUROL SECT, OMAHA, NE, 68198
CYA USA
SO JOURNAL OF COMPARATIVE NEUROLOGY, (***02 JAN 1995***) Vol. 351, No. 1, pp. 94-103.
ISSN: 0021-9967.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 38
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 69 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 93:593140 SCISEARCH
GA The Genuine Article (R) Number: LY325
TI REGULATION OF EXPRESSION OF CHOLINERGIC NEURONAL PHENOTYPIC MARKERS IN NEUROBLASTOMA LA-N-2
AU RYLETT R J (Reprint); GODDARD S; LAMBROS A
CS UNIV WESTERN ONTARIO, DEPT PHYSIOL, MED SCI BLDG, LONDON N6A 5C1, ONTARIO, CANADA (Reprint); UNIV WESTERN ONTARIO, DEPT PHARMACOL & TOXICOL, LONDON N6A 5C1, ONTARIO, CANADA
CYA CANADA
SO JOURNAL OF NEUROCHEMISTRY, (***OCT 1993***) Vol. 61, No. 4, pp. 1388-1397.
ISSN: 0022-3042.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 45
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 70 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 93:132541 SCISEARCH
GA The Genuine Article (R) Number: KN957
TI THE CATION RECEPTOR SUBSITE OF THE ***CHOLINE*** ***TRANSPORTER*** IN PREIMPLANTATION MOUSE CONCEPTUSES RESEMBLES A CATION RECEPTOR SUBSITE OF SEVERAL AMINO-ACID TRANSPORTERS
AU VANWINKLE L J (Reprint); CAMPIONE A L; MANN D F; WASSERLAUF H G

CS CHICAGO COLL OSTEOPATH MED, DEPT BIOCHEM, 555 31ST ST, DOWNERS GROVE, IL, 60515 (Reprint)
CYA USA
SO BIOCHIMICA ET BIOPHYSICA ACTA, (***23 FEB 1993***) Vol. 1146, No. 1, pp. 38-44.
ISSN: 0006-3002.
DT Article; Journal
FS LIFE
LA ENGLISH
REC Reference Count: 42
ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

L3 ANSWER 71 OF 75 SCISEARCH COPYRIGHT (c) 2004 The Thomson Corporation. on STN
AN 92:39474 SCISEARCH
GA The Genuine Article (R) Number: GY440
TI PARTIAL-PURIFICATION OF LOW AFFINITY ***CHOLINE*** ***TRANSPORTER*** FROM ***HUMAN*** LUNG ADENOCARCINOMA CELLS (A549)
AU ZIMMERMAN U J P (Reprint); FISHER A B
CS UNIV PENN, SCH MED, INST ENVIRONM MED, PHILADELPHIA, PA, 19104
CYA USA
SO FASEB JOURNAL, (***01 JAN 1992***) Vol. 6, No. 1, pp. A93.
ISSN: 0892-6638.
DT Conference; Journal
FS LIFE
LA ENGLISH
REC No References

L3 ANSWER 72 OF 75 TOXCENTER COPYRIGHT 2004 ACS on STN
AN 1994:25093 TOXCENTER
DN PubMed ID: 1343697
TI Basic biochemical investigations as rationale for the design of original antimalarial drugs. An example of phospholipid metabolism
AU Vial H J; Angelin M L; Elabbadi N; Calas M; Cordinas G; Giral L
CS Laboratoire de Chimie Organique Structurale, CNRS URA 530, Montpilleir, France
SO Memorias do Instituto Oswaldo Cruz, (***1992***) 87 Suppl 3 251-61. Ref: 57.
Journal Code: 7502619. ISSN: 0074-0276.
CY Brazil
DT Journal; Article; (JOURNAL ARTICLE)
General Review; (REVIEW)
(REVIEW, TUTORIAL)
FS MEDLINE
OS MEDLINE 94142576
LA English
ED Entered STN: 20011116
Last Updated on STN: 20040406

L3 ANSWER 73 OF 75 USPATFULL on STN
AN 1999:85438 USPATFULL
TI Decahydroquinoline-based anti-cholinergic agents
IN Efange, S. Mbua Ngale, Plymouth, MN, United States
Parsons, Stanley M., Santa Barbara, CA, United States
PA Regents of the University of Minnesota, Minneapolis, MN, United States (U.S. corporation)
PI US 5929087 19990727 <--
AI US 1997-826830 19970408 (8)
DT Utility
FS Granted
LN.CNT 857
INCL INCLM: 514/314.000
INCLS: 514/278.000; 546/017.000; 546/154.000; 546/158.000; 546/164.000
NCL NCLM: 514/314.000
NCLS: 514/278.000; 546/017.000; 546/154.000; 546/158.000; 546/164.000
IC [6]
ICM: A61K031-47
ICS: C07D401-04
EXF 546/164; 546/154; 546/158; 546/17; 514/314; 514/312
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 74 OF 75 USPATFULL on STN
AN 1998:57772 USPATFULL
TI DNA encoding a glycine transporter and uses thereof
IN Smith, Kelli E., Wayne, NJ, United States
Borden, Laurence A., Hackensack, NJ, United States

Branchek, Theresa, Teaneck, NJ, United States
Hartig, Paul R., Princeton, NJ, United States
Weinshank, Richard L., New York, NY, United States
PA Synaptic Pharmaceutical Corporation, Paramus, NJ, United States (U.S. corporation)
PI US 5756348 19980526 <--
WO 9310228 19930527 <--
AI US 1994-240783 19941110 (8)
WO 1992-US9662 19921112
19941110 PCT 371 date
19941110 PCT 102(e) date
RLI Continuation-in-part of Ser. No. US 1991-791927, filed on 12 Nov 1991, now abandoned
DT Utility
FS Granted
LN.CNT 2223
INCL INCLM: 435/325.000
INCLS: 536/023.500; 435/320.100; 435/252.330; 435/255.100
NCL NCLM: 435/325.000
NCLS: 435/252.330; 435/255.100; 435/320.100; 536/023.500
IC [6]
ICM: C12N015-12
EXF 536/23.1; 536/23.5; 435/69.1; 435/240.1; 435/240.2; 435/252.3; 435/252.33; 435/320.1; 435/255.1; 435/325
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 75 OF 75 USPATFULL on STN
AN 97:73495 USPATFULL
TI DNA encoding rat taurine transporter and uses thereof
IN Smith, Kelli E., Wayne, NJ, United States
Weinshank, Richard L., New York, NY, United States
Borden, Laurence A., Hackensack, NJ, United States
Hartig, Paul R., Princeton, NJ, United States
PA Synaptic Pharmaceutical Corporation, Paramus, NJ, United States (U.S. corporation)
PI US 5658786 19970819 <--
WO 9318143 19930916 <--
AI US 1994-295814 19941219 (8)
WO 1993-US1959 19930304
19941219 PCT 371 date
19941219 PCT 102(e) date
RLI Continuation-in-part of Ser. No. US 1992-959936, filed on 13 Oct 1992, now abandoned which is a continuation-in-part of Ser. No. US 1992-847742, filed on 4 Mar 1992, now abandoned
DT Utility
FS Granted
LN.CNT 3815
INCL INCLM: 435/365.000
INCLS: 536/023.500; 435/069.100; 435/252.300; 435/255.100; 435/320.100; 435/325.000
NCL NCLM: 435/365.000
NCLS: 435/069.100; 435/252.300; 435/255.100; 435/320.100; 435/325.000; 536/023.500
IC [6]
ICM: C12N001-19
ICS: C12N001-21; C12N015-12; C12N015-79
EXF 536/23.5; 536/24.3; 536/24.31; 536/24.33; 435/6; 435/69.1; 435/172.3; 435/240.2; 435/255.1; 435/252.3; 435/320.1
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
STN INTERNATIONAL LOGOFF AT 18:07:03 ON 07 OCT 2004